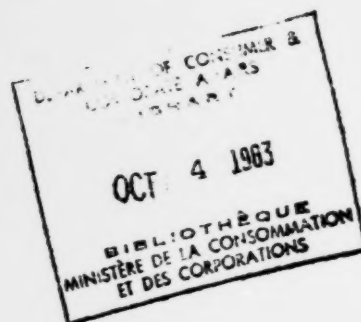


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CONSUMER ENERGY CONSERVATION OPTIONS - PROFESSIONAL
AND CONSUMER PERSPECTIVES



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The views presented in this paper are those of
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TABLE OF CONTENTS

	<u>Page</u>
<u>EXECUTIVE SUMMARY</u>	1
- Overview, Objectives and Conclusions	
<u>PART I - IDENTIFYING CONSERVATION POLICY OPTIONS</u>	9
- Methods of Identifying Conservation Policy Options	
* Exploratory Interviews	
* Annotated Directory of Energy Conservation Programs	
<u>PART II - PROFESSIONAL ASSESSMENT OF CONSERVATION POLICY OPTIONS</u>	13
- Methodology	
- Expert Opinion Regarding Conservation Program Priorities	
<u>PART III - CONSUMER VIEWS CONCERNING POLICY ALTERNATIVES</u>	22
- Introduction	
- Objectives	
- Methodology	
- Consumer Views on Importance and Acceptability of Selected Consumer Conservation Programs	
- Consumer Views on Different Policy Directions and Program Philosophies	
- Comparisons Across Regions of Canada	
- Comparisons Across Income Groups	
- Comparisons of Male/Female Views	
- Conclusions	
<u>APPENDIX I</u>	
- Annotated Directory of Energy Conservation Program	
<u>APPENDIX II</u>	
- Questionnaire Used in Survey of Professionals	
<u>APPENDIX III</u>	
- Questionnaire Used in Survey of Consumers	

EXECUTIVE SUMMARY

OVERVIEW, OBJECTIVES AND CONCLUSIONS

INTRODUCTION

The federal government is committed to energy conservation in the consumer sector as a key component in achieving a basic energy balance in Canada. One facet of this commitment is the design programs which effectively and efficiently accelerate consumer energy conservation efforts. At issue is the question "what are the conservation programs and the characteristics of conservation programs which are most efficient and effective at achieving this acceleration?"

This report addresses this issue by presenting the results of a study of policy options for consumer energy conservation. The report is divided into three major parts. Part I discusses the initial phases of the study involving exploratory interviews with professionals in the field of energy conservation and the preparation of an Annotated Directory of Energy Conservation Programs. Part II presents the results of a survey to assess the desirability and effectiveness of these Energy Conservation Programs, as perceived by professionals in the field. Part III describes the findings from a subsequent survey of Canadian consumers. The consumer survey evaluated conservation policy options that evolved from the survey of professionals. The sample was the same national panel of Canadian households that had been used two years earlier in a study of energy consumption and conservation patterns.

Background

In 1977 the Canadian government, through the Departments of Consumer and Corporate Affairs, and Energy Mines and Resources, initiated a research program intended to provide greater understanding in the area of consumer energy use. Although there had been considerable technical research

focused on devices and equipment for greater energy efficiency, there was little reported research that addressed behavioral responses to energy issues. The 1977 research program represented an important initiative concerned with behavioral aspects of consumer energy use.

An event that helped to put Canadian energy research efforts into perspective was the International Conference on Consumer Behavior and Energy Use, Banff, September 1980. Researchers from Canada, the United States, Europe, and South America presented papers in this area (Claxton, et al, 1981). It was clear from this state of the art review that the Canadian research program initiated in 1977 had been one of the first major commitments to the field, and that it currently enjoys an international reputation as a major contributor to the understanding of consumers and energy use.

Prior Research

The research that led directly to the study described in this report was a national survey of consumer energy consumption and conservation patterns (McDougall, Ritchie and Claxton, 1979). The objectives of this earlier work were as follows:

Objective 1

To measure and classify household patterns of energy consumption as they relate to automobile use, home heating and other selected consumer products and activities.

Objective 2

To establish the relationship in the Canadian setting between patterns of energy consumption and household characteristics.

Objective 3

To determine the relationship between patterns of energy consumption and consumer lifestyles, attitudes, interests, opinions and knowledge.

Objective 4

To identify and conduct preliminary evaluations of the dimensions of alternative policy proposals related to product/service design and use which might reduce levels of energy consumption.

In summary, the focus of the earlier work was to describe Canadian households in terms of actual energy consumption, and attempt to understand differences in consumption levels by analyzing differences in factors such as, attitudes, knowledge, demographics and house and vehicle characteristics. As indicated by Objective 4, the earlier research also gave preliminary consideration to options for energy conservation programs. The purpose of the present study was to conduct a more complete evaluation of this area of conservation program options.

Objectives of the Study

From the outset of this study it was evident that the identification and evaluation of conservation policy options was a complex task. On the one hand, a number of alternatives had already been initiated by various agencies around the world. It seemed important to attempt to learn more about policy options by reviewing these existing efforts. On the other hand, the criteria for evaluation policy options needed to be clarified. Although 'degree of energy conservation' was an obvious criterion, other issues, such as administrative, economic, and political feasibility needed to be considered.

The three objectives that were established to guide the study were as follows:

1. To identify government policies which might be implemented within the short and intermediate term within both the public and private sectors so as to reduce consumption by Canadian consumers of home heating fuel, electricity, and gasoline.
2. To assess the probable effectiveness of different policy alternatives as a means of reducing consumer energy consumption.
3. To measure the acceptability to Canadian consumers of different policy alternatives for reducing consumer energy consumption.

The research related to each of the above three objectives is described in Part I, Part II and Part III respectively of this report.

These objectives were accomplished by:

1. Conducting personal interviews with a cross-section of professionals working in the field of energy conservation. These interviews led to the collection of information on the existence of ongoing energy conservation programs.
2. Preparing an Annotated Directory of Energy Conservation Programs which described 34 programs in the area of home heating/cooling, household appliances, private transportation, and community involvement.
3. Conducting a mail interview with a panel of energy conservation professionals. These professionals evaluated the 34 programs on a number of criteria. This information was used to identify those programs which had a high degree of approval by the professionals.
4. Conducting a mail interview with a national panel of Canadian consumers who evaluated selected programs previously reviewed by the professionals. In addition a number of program characteristics were evaluated by these consumers.

Beyond these objectives, information was also gathered on the energy conservation activities of the consumer households surveyed. This information provides a longitudinal look at the behavior of 1,451 households who had participated in a previous survey conducted in late 1978. A wide range of issues can be addressed with this data such as:

1. The impact of the ENER\$AVE program.
2. Patterns of home energy conservation activities of a sample of Canadian households over a two year period.
3. Patterns of automobile ownership and usage over the same period.

The researchers plan to examine these issues and prepare papers on these subjects. However, for this executive summary the implications and recommendations are focused on the previously mentioned objectives.

CONCLUSIONS AND IMPLICATIONS

In the review of existing consumer energy conservation programs, 34 programs were presented in the annotated directory. These 34 programs should be considered a subset of a far larger group of conservation programs in existence in both North America and Europe. Further, in the discussions with professionals, they offered a number of ideas which could lead to new programs being developed. Consequently, a wealth of information exists on conservation programs which would be of value to those involved in planning, managing, or evaluating programs.

Conclusion 1

There is a need for an information system to gather data on existing conservation programs. The information would be disseminated to officials and researchers in the energy conservation field at designated intervals.

The format of the information should be similar to the annotated directory. The purpose of this system is to increase the knowledge of relevant parties as to the outcomes, both positive and negative, of operating programs. This should allow these individuals to improve the efficiency and effectiveness of current programs and all offer ideas for new program possibilities.

The professional assessment of the 34 programs resulted in a relatively high positive evaluation of six programs; two concerned with energy labelling and standards (the Canadian Energuide program and the Energy mark program), two concerned with home retrofit and audits (the Canadian CHIP program and the Tennessee Valley Authority HIP program), one concerned with a comprehensive city plan (Portland's Energy Conserve program), and one concerned with transportation (San Diego's Commuter Computer program). These programs, or possible derivations of them have been considered by the professionals to be the most promising avenues for consumer energy conservation.

Conclusion 2

A detailed investigation of existing programs should be conducted. Specifically, the costs and benefits of these programs should be determined and any major problems/opportunities of these programs should be articulated. All evaluation studies conducted on these or similar programs should also be collected. This should indicate the possibilities for improvements in existing programs and considerations for new programs.

Members of the national consumer panel (both male and female head of households) were asked to evaluate 10 specific programs; five variations of

home audit programs, three variations of home retrofit programs, and two automobile conservation programs. The results of their assessment indicated that, while most programs were received favourably, the highest rating was given to a CHIP type program offering a grant of up to \$800 to cover insulation costs. Surprisingly, this program was preferred to the same program but with a grant of \$1,200. It appears that the respondents felt there should be an upper limit on the amount of grants made available by government. With this exception, respondents preferred programs where the cost was low or the cost was borne mainly by government, as opposed to the householder. The CHIP type programs with grants, and the ENER\$AVE program were the highest rated programs. Two major discrepancies should be noted between the professionals' evaluations and the consumers' evaluations. The "commuter computer" program was favoured by experts but ranked low by consumers. The ENER\$AVE type program was favoured by consumers but not by experts.

These discrepancies create problems for officials concerned with developing and implementing programs in this area. Consumers are likely to resist or have little reaction to programs they do not consider acceptable or important. Thus, the effectiveness and efficiency of these programs will be reduced because of consumers' predisposition. Conversely, professionals who feel that certain types of programs are ineffective may want to collect more information to substantiate (or deny) their position, or examine consumer feelings and reactions towards these programs to gain a better understanding of the reasons for acceptability.

Conclusion 3

CHIP type retrofit programs should be continued and considered for expansion. Consumer and expert reaction is extremely favorable towards these types of programs. Some consideration should be given to linking home audit programs with the CHIP style programs. The benefits to be derived from these linkages include: providing information to homeowners of the economic effects of various conservation steps and providing government officials with a means for allocating resources to high payoff conservation measures. In addition, the linkage might increase overall conservation activity by homeowners. At a minimum, consideration should be given to conducting a small scale home audit combined with incentive programs to ascertain the benefits.

Conclusion 4

Any new conservation programs in the private transportation sector should be thoroughly tested on a small scale before any wide-spread implementation is considered. The evidence indicates that certain programs which are evaluated favourably by professionals (e.g. - Commuter Computer) may not be received favourably by consumers. Because of the importance of conservation in this area, more effort needs to be directed towards identifying and developing programs which will be acceptable and acted upon by consumers. This will require further study of existing programs, a better understanding of consumer behavior with respect to transportation, and small scale experiments to determine the characteristics of effective private transportation conservation programs.

PART I

IDENTIFYING CONSERVATION POLICY OPTIONS

IDENTIFYING CONSERVATION POLICY OPTIONS

The major steps involved in the identification of policy options were: (1) interviewing professionals in the area of energy conservation; and (2) compiling an "Annotated Directory of Energy Conservation Programs." This section describes the methods used in this phase of the research.

METHODS OF IDENTIFYING CONSERVATION POLICY OPTIONS

Exploratory Interviews

As described in an interim report, the preliminary efforts in this study involved personal interviews with a cross section of professionals working in the area of energy conservation. The professionals were selected to provide energy related views from federal and provincial government departments, utilities and crown agencies, and the private sector. The interviews concentrated on two areas:

- (1) Identification of existing conservation policies and programs--these were subsequently used in the development of the program directory.
- (2) Identification of key criteria for the evaluation of policy options--these were subsequently used in designing the questionnaire for the survey of experts.

Annotated Directory of Energy Conservation Programs

The interviews with conservation professionals provided a substantial number of leads regarding the existence of ongoing energy conservation programs. These leads, plus several months of mail inquiries, produced data describing conservation programs operating throughout Canada and United States. A cross section of these programs was summarized in the "Annotated Directory of Energy Conservation Programs," included as Appendix I.

The directory provides one-page summaries of 34 existing conservation programs. These were categorized by four areas of focus, namely home heating and cooling, household appliances, private transportation, and community involvement programs. Although the directory was not exhaustive with respect to the range of programs in existence, it attempted to provide a cross section of existing types.

In the process of compiling the Directory it became apparent that certain types of programs tend to dominate each of the four areas of focus. The provision of energy consumption and conservation information, through programs involving the mass media, booklets, demonstrations, labeling and audits, has clearly been the most favoured path to energy conservation. The following list provides an indication of the main program emphasis in each area.

Home Heating and Cooling Emphasis:

- . Information campaigns focusing on home energy use and conservation tips
- . Energy efficient demonstration homes
- . Home audits to identify areas for insulation and other improvements
- . Development of energy conserving building standards, plus incentives for builders to exceed them
- . Alternative heating and cooling sources, particularly solar and wind
- . Air-conditioning load cycling

Household Appliance Program Emphasis:

- . Information campaigns focusing on appliance energy consumption and conservation tips
- . Energy efficiency labeling for major appliances

Private Transportation Program Emphasis:

- . Information campaigns focusing on automobile fuel consumption, driving skills, and car-care tips
- . Restrictions on automobile use, such as speed limits and gas rationing
- . Carpooling and vanpooling

Community Involvement Program Emphasis:

- . Information campaigns focusing on the need to conserve, major conservation methods, and the importance of total community involvement
- . Home audits and retrofitting
- . Developing regional conservation standards

The rationale for preparing the directory was twofold. First, the directory was expected to be of interest to a broad range of practitioners, researchers and policy-makers. To date there have been over 40 requests for copies. Second, the main purpose was to provide a vehicle that could be used to stimulate the evaluation of conservation policy options. To this end the directory was used as the focus for the survey of conservation experts.

PART II

PROFESSIONAL ASSESSMENT OF CONSERVATION POLICY OPTIONS

PROFESSIONAL ASSESSMENT OF CONSERVATION POLICY OPTIONS

METHODOLOGY

The exploratory interviews with energy conservation professionals provided insights of three types. First, as indicated above, they helped to identify the programs included in the directory. Second, the interviews suggested the criteria that should be used to evaluate conservation policy options. Third, the interviews indicated the value of obtaining the views of experts. As a result, attention was directed to identifying a panel of conservation experts, and asking them to evaluate the directory programs in terms of the criteria suggested by the exploratory interviews.

The sample of experts was compiled by an iterative process of asking experts to suggest other experts and looking for converging suggestions. A total of 34 were asked to participate in the study. Of these 29 agreed, and 5 did not feel that they had time. The results reported below are based on the views of 22 experts. At the time of writing 7 had yet to respond.

Each expert was sent a copy of the directory, and a questionnaire that involved evaluation of the 34 directory programs on each of six criteria: administrative feasibility, acceptability to consumers, total costs, energy savings benefits, fairness and equity, and overall desirability. The criteria as defined in the questionnaire, are presented in Figure 2.1. The complete questionnaire is included as Appendix II.

FIGURE 2.1

CRITERIA FOR EVALUATION OF CONSERVATION POLICY OPTIONS

Administrative Feasibility: is intended to refer to possible political, legal and administrative barriers to program implementation and operation. Feasibility is not intended to refer to consumer acceptance/non-acceptance of the program.

Acceptability to Consumers: is intended to refer to the extent to which consumers accept and adopt voluntary conservation suggestions, or find imposed restrictions acceptable.

Total Costs: are intended to include all expenses to the program sponsors regarding development, implementation and operation over a five year operation.

Energy Savings Benefits: are intended to include the actual energy conservation achieved over a five year operation. Actual energy conservation could be viewed as the potential conservation (if everything worked perfectly) reduced by some amount to recognize that all consumers may not adopt the intended conservation behaviors.

Fairness and Equity: is intended to refer to the extent to which the program will impact equally or require similar sacrifices for all segments of the population.

Overall Desirability: is intended to be summary of your overall evaluation of the program based on whatever criteria you consider important.

The experts responding to the questionnaire were currently employed by various federal ministries (4), provincial departments of energy (4), hydro (8) and gas (1) utilities, consumer organizations (2), academic institutions (1), and private consulting firms (2). There was a respondent from each province except Nova Scotia. The average number of years experience in the energy field was 10. In terms of areas of conservation expertise the respondents were spread relatively evenly across home heating, appliances, private transportation and community involvement programs. In terms of program management respondents had relatively high levels of experience in program formulation, implementation, and operation, but only moderate levels of experience in program evaluation.

EXPERT OPINION REGARDING CONSERVATION PROGRAM PRIORITIES

Tables 2.1 through 2.4 provide a summary of expert opinion regarding the 34 conservation programs contained in the directory. The intent of having experts rate the directory of programs was to provide guidance as to priority avenues for future conservation initiatives. However, two caveats must be emphasized. First, the directory did not provide examples of every possible type of program. Thus, the process may have missed viable conservation options. Second, the directory description of each program was relatively brief. Thus, it is possible that a program may have received a poor rating due to an inadequate description rather than because of an inherent weakness in program design. Recognizing these limitations, the purpose here is to discuss general patterns in the opinions expressed by the panel of experts.

The reader is encouraged to study the tables in detail. However, the following are seen as major points of interest:

- . The Energuide appliance labelling program is viewed as a top conservation program. Although it did not receive top rating for 'Energy Savings', the other criteria apparently compensate for this. It is clearly a program to which experts would continue to give high priority.
- . Home retrofit programs should also continue to receive high priority. The CHIP program, although considered costly, was viewed as one of the top conservation programs. Many variations in retrofit programs are evidenced by the programs included in the directory [(2), (6), (18), (13), (5), (19)]. A major difference between CHIP and some of the others was that CHIP does not provide home inspection and advice. By reviewing other retrofit programs of this type, modification to CHIP can be considered.
- . A program that received a very positive rating on all six criteria was the Energymark program initiated by the builders association of Missouri. This association set weatherization standards and then provided labels to be used on new homes that met the standards. The experts' views suggest that a conservation priority should be to encourage Canadian builders to adopt a similar program.
- . The auto program that received highest ratings was the Commuter Computer program run in San Diego, California. This program is intended to facilitate car pooling by using a computer to match commuters that telephone for the service. The experts' ratings indicate that this type of program is viewed as also having energy conservation potential in Canada.
- . There were three types of programs that were viewed as low priorities: Solar programs, community involvement programs, and information campaigns. All were viewed as having less impact on energy saving.

This section of the report has provided an indication of the views of a panel of energy conservation professionals. The final phase of this study used these professional views as input to the design of a consumer survey. This survey is discussed in Part III which follows.

TABLE 2.1
GENERAL RATINGS OF 'PREFERRED' PROGRAMS^a

RANKED PROGRAMS ^b	Admin. Feasibility	Consumer Acceptance	Total Cost	Energy Saving	Equity & Fairness	Overall Desirability
Energuide (21) ^c		+	+		+	+
CHIP (4)		+	-	+		+
Energymark (20)	+	+	+	+	+	+
Home Insulation Program (2)		+	-	+		+
Portland E.C. Project (32)		+	-	+	+	+
Commuter Computer (23)		+	+	+	+	+
Fitchburg Action to Conserve (33)		+		+	+	+
Operation Tune-Up (25)			+		+	+
Home Survey Check (6)	+	+	-	+	+	+
Project Pool-it (22)			+	+	+	+
Manpower Training Project (18)		+	-			+
Speed Limits (24)		-	+	+	+	+
Insulation Financing (13)	+	+	+	+	+	+
Public E.C. Info Program (34)	+		+	-	+	+
Passive Solar Home (11)	+	+	-		-	+
Home Insulation & E.C. Program (5)						+
Heat Pump Financing (12)		+	-	+		+

^aPREFERRED programs are the top 17 of 34 programs in terms of 'Overall Desirability'.

^bThe programs are ranked in terms of 'Overall Desirability'.

^cThe numbers in brackets refer to the page in the Directory of Conservation Programs

^dEach program was rated low to high from (1 to 5) on each of the 6 criteria. Ratings of > 3.5 were labeled '+'. Ratings of > 3.0 were labeled '-' (reversed for the Total Cost criteria). Mean scores are presented in Table 2.3.

TABLE 2.2
GENERAL RATINGS OF 'OTHER' PROGRAMS^a

RANKED PROGRAMS ^b	Admin. Feasibility	Consumer Acceptance	Total Cost	Energy Saving	Equity & Fairness	Overall Desirability
EnerSave (3)	+	+	+	-	+	
Residential E.C. Schedule (19)		+	+	+	+	
Home Planning Kit (1)	+	+	+	-		
Home Insulation Loan (14)		+				
Total Community E.C. (31)			+	-	+	
Air Conditioner Cycling (17)						
Memphis Solar Demo (9)	+		-	-		
Solar Hot Water Demo (10)	+		-	-	-	
Wisconsin Tax Credit (16)			-	-	-	-
Solar Tax Credit (15)	+	+	-	-	-	-
Eneraction (30)				-		-
Home Conserve Requirement (7)	-	-	-	+	-	-
Thermography Flyover (8)	+			-	+	-
Canada Gas Rationing Plan (28)	-	-	-	+	-	-
U.S. Emergency E.C. Plan (29)	-	-	-	+	-	-
Carless Days (26)	-	-	+		-	-
Gas Sales Restrictions (27)	-	-	+	-	-	-

^aOTHER programs are the bottom 17 of 34 programs in terms of 'Overall Desirability'.

^bSee footnotes Table 2.1

TABLE 2.3
MEAN RATINGS OF EACH PROGRAM ON SIX CRITERIA^a

PROGRAM NAME	Admin. Feasibility	Consumer Acceptance	Total Cost	Energy Saving	Equity & Fairness	Overall Desirability
Energuide	3.4	4.1	2.4	3.2	4.3	4.3
CHIP	3.4	3.7	3.7	3.8	3.3	4.1
Energymark	3.5	4.2	2.3	3.7	3.9	4.1
Home Insulation Program	3.3	4.4	4.1	4.1	3.4	4.1
Portland E.C. Project	3.0	3.8	3.8	3.8	3.8	4.0
Commuter Computer	3.1	3.6	2.7	3.9	4.1	3.9
Fitchburg Action to Conserve Energy	3.3	3.7	3.0	3.5	3.8	3.8
Operation Tune-Up	3.2	3.2	2.2	3.2	3.6	3.7
Home Survey Check	3.5	3.9	3.6	3.8	3.7	3.7
Project Pool-it	3.1	3.1	2.4	3.5	3.7	3.6
Manpower Training Project	3.4	3.7	3.6	3.4	3.4	3.6
Speed Limits	3.1	2.2	2.2	3.6	3.8	3.1
Insulation Financing	3.6	3.6	2.8	3.5	3.5	3.6
Public E.C. Info Program	3.5	3.4	2.7	2.5	4.0	3.6
Passive Solar Home	3.7	3.6	3.6	3.2	2.8	3.5
Home Insulation & E.C. Program	3.2	3.4	3.4	3.4	3.4	3.5
Heat Pump Financing	3.2	3.6	3.8	3.5	3.3	3.5
EnerSave	3.8	3.7	2.6	2.9	3.5	3.4
Residential E.C. Schedule	3.0	3.7	2.9	3.5	3.5	3.4
Home Planning Kit	4.3	3.8	2.1	2.7	3.3	3.3
Home Insulation Loan	3.2	3.6	3.1	3.1	3.2	3.2
Total Community E.C.	3.0	3.2	2.8	2.7	3.6	3.1
Air Conditioner Cycling	3.3	3.1	3.4	3.0	3.3	3.1
Memphis Solar Demo	3.5	3.1	4.1	2.9	3.1	3.0
Solar Hot Water Demo	3.7	2.1	3.8	2.6	2.8	3.0
Wisconsin Tax Credit	3.2	3.4	3.5	2.9	2.8	2.9
Solar Tax Credit	3.5	3.7	3.8	2.8	2.6	2.9
Eneraction	2.8	3.4	3.3	2.5	3.2	2.9
Home Conserve Requirement	2.5	2.1	3.9	3.8	2.9	2.8
Thermography Flyover	3.8	3.6	3.2	2.5	3.6	2.8
Canada Gas Rationing Plan	2.4	1.8	3.7	3.9	2.7	2.6
U.S. Emergency E.C. Plan	3.0	1.7	3.5	3.7	2.7	2.6
Carless Days	2.5	1.4	2.3	3.2	2.9	2.3
Gas Sales Restrictions	2.6	1.6	1.9	2.2	2.5	1.9

a: low = 1
high = 5

TABLE 2.4
PROGRAM 'BEST' AND 'WORST' RATINGS^a

PROGRAM NAME	# of Times Selected as 1 of Top 5	# of Times Selected as 'BEST'	# of Times Selected as 1 of WORST 5	# of Times Selected as 'WORST'	Overall Desirability
Energuide	8		2		4.3 ^a
CHIP	11	4	2		4.1
Energymark	3				4.1
Home Insulation Program	10	4			4.1
Portland E.C. Project	4	2			4.0
Commuter Computer	8				3.9
Fitchburg Action to Conserve Energy	4	2			3.8
Operation Tune-Up	4	1	1	1	3.7
Home Survey Check	4	1			3.7
Project Pool-it	4		1		3.6
Manpower Training Project	4	1	1		3.6
Speed Limits	5	2	3		3.6
Insulation Financing	3				3.6
Public E.C. Info Program	2	2			3.6
Passive Solar Home	5		2		3.5
Home Insulation & E.C. Program	2	1	2		3.5
Heat Pump Financing	1		1		3.5
EnerSave	5	1	3	1	3.4
Residential E.C. Schedule			4		3.4
Home Planning Kit	3		1	1	3.2
Home Insulation Loan	1		2		3.2
Total Community E.C.		1	3		3.1
Air Conditioner Cycling	3		8		3.1
Memphis Solar Demo	1		4	1	3.0
Solar Hot Water Demo	2		4	1	3.0
Wisconsin Tax Credit	2		6	1	2.9
Solar Tax Credit	1		5	3	2.9
Eneraction	3		5	1	2.9
Home Conserve Requirement	4		8	1	2.8
Thermography Flyover			8	4	2.8
Canada Gas Rationing Plan	1		6	4	2.6
U.S. Emergency E.C. Plan			4	1	2.3
Carless Days	1		8	1	2.3
Gas Sales Restrictions			11	3	1.9

^a: low = 1
high = 5

PART III

CONSUMER VIEWS CONCERNING POLICY ALTERNATIVES

INTRODUCTION

The previous parts of this report have described how a range of consumer conservation policies/programs were identified and catalogued, as well as how an expert assessment of the probable effectiveness of selected programs was carried out. While these two steps were critical in themselves, they were primarily designed to provide carefully screened input which could be used to obtain consumer views concerning the desirability and acceptability of particular energy conservation approaches which are currently in effect or which might be implemented in Canada. This part of the report describes the finding of a national survey designed to solicit the reactions of consumers to a number of conservation policies and programs and to relate these reactions to various characteristics of members of the Canadian population.

OBJECTIVES OF PART III

The general goal of measuring consumer views concerning energy conservation programs was operationally addressed by means of two specific research objectives. These were:

1. To determine the extent to which selected energy consumption programs were judged by consumers to be;
 - a) important for achieving energy conservation in Canada
 - b) acceptable to most Canadians
2. To determine the position of consumers with respect to various policy directions that might be pursued in formulating and implementing energy conservation programs in Canada.

METHODOLOGY

DATA COLLECTION INSTRUMENTS

The data required to meet the above noted objectives were gathered by means of three separate questionnaires which were sent to each household participating in the study. The contents of two of the questionnaires were identical; these instruments differed only in that they were separately addressed to the male and female heads of the household. Information gathered via these questionnaires pertained primarily to objectives 1 and 2 noted above. The third questionnaire was designed to obtain data related to household conservation actions. The information obtained with this questionnaire provided a valuable data base on the conservation activities of a sample of Canadian households over a two year period. Analysis of this information is being conducted by the researchers and will be reported on at a later date. Respondents were requested to complete this questionnaire either individually or jointly with their spouse. The complete set of questionnaires employed is attached in Appendix III.

SAMPLE EMPLOYED

In order to provide a meaningful basis of comparison with previous work in the field in Canada, the sample of consumers studied was drawn from the national consumer panel of Canadian Family Opinion/Canadian Facts. More specifically, the sample included 2,366 households which had participated in a previous study (McDougall, Ritchie and Claxton, 1979). Details on the original sample design and characteristics are contained in that report. Of this number, a total of 1838 were still active members of the panel at the time of this study.

As seen from Table 3.1, responses were obtained from 1451 households to which questionnaires were mailed. Of these, 1148 (79.1%) households provided a complete set of responses. In aggregate terms, these responses were distributed approximately in proportion to the population of each of the provinces in Canada (See Table 3.2). Demographic characteristics of households and respondents for the 1978 survey, the 1980 survey, and, where possible, the Canadian population, are presented in a series of Tables (3.3A to 3.3J).

Because the sample households were drawn from a consumer panel, the possibility of sample bias relative to the total Canadian population could exist (Carman, 1974). The major difference between the sample and the population was home ownership. Approximately 3 out of 5 (62 percent; 1976 Census) households in the population own their homes whereas eighty-seven percent of the sample owned their own homes and only 13 percent rented their accommodation (Table 3.3A). This bias was considered desirable because there is a greater potential for energy conservation among homeowners and they have more control over their energy usage. Further, programs such as those considered here are most relevant for those that pay energy costs directly. In summary, homeowners are the target audience for most residential energy conservation policies.

Comparisons on a number of other socio-demographic characteristics support the contention that other than home ownership difference, the sample reflects the Canadian population. By way of summary, the sample had the following characteristics: 80 percent lived in single-detached homes, 7 percent lived in apartments, 11 percent lived in duplex/triplex/fourplex,

and 2 percent in other accommodation (Table 3.3B). The average age of the houses was 31 years old. English was the major language of 78 percent of the households, French of 21 percent and other languages spoken was 1 percent (Table 3.3C). The average age of the female head of household was 48 (Table 3.3D), average family income was \$19,000 (Table 3.3E), an average of 3.2 people lived in each household (Table 3.3F), 88 percent of the sample was married (Table 3.3G) and the median education level was high school graduation (Table 3.3H). The distribution of the sample by the size of the community in which they reside is presented in Table 3.3I and the employment status of the male and female heads of household is given in Table 3.3J.

CONSUMER VIEWS ON IMPORTANCE AND ACCEPTABILITY
OF SELECTED CONSUMER CONSERVATION PROGRAMS

Both male and female heads of households were requested to indicate the extent to which they considered ten government run energy conservation programs to be:

- a) acceptable to most Canadians
- b) important for Canadian energy conservation

The acceptance and importance of each program was measured on a six point scale (1 = completely unacceptable; 6 = completely acceptable/1 = not important at all; 6 = extremely important). These measures were obtained for all ten programs. The manner in which these programs were defined is given in Figure 3.1.

Figure 3.1

**DESCRIPTIONS OF ENERGY CONSERVATION PROGRAMS RATED
BY CONSUMERS FOR ACCEPTABILITY AND IMPORTANCE**

- | | |
|--|--|
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">Program 1.</div> | A home energy audit conducted by a trained advisor. The advisor assesses the energy efficiency of the home and suggests weatherization and insulation improvements, their costs and benefits, and provides a list of approved local insulation contractors. The cost of this audit (\$125 per home) would be paid for by the government. |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">Program 2.</div> | The same program as described above (in Program 1), except the cost of the audit (\$125 per home) would be paid partly by the homeowner (they would pay \$25) and the rest (\$100) would be paid by the government. |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">Program 3.</div> | The same program as described above (in Program 1), except the entire cost of the audit (\$125 per home) would be paid for by the homeowners. |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">Program 4.</div> | A home energy audit in which homeowners complete a questionnaire on their house size and shape and amount of insulation. The questionnaire is sent away for computer processing. The homeowner is sent back a list of recommended home insulation procedures, what they would cost and how much energy would be saved. The cost of this audit (\$10 per home) would be paid for by the government. |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">Program 5.</div> | A do-it-yourself home energy audit kit. The homeowner does the audit using kit instructions, and analyzes the data with an energy work-book. The cost of this audit (\$1 per home) would be paid for by the government. |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">Program 6.</div> | Homeowners who insulate their homes would be eligible for a government grant of up to \$800 to cover the costs of the insulation. |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">Program 7.</div> | Homeowners who insulate their homes would be eligible for a government grant of up to \$1,200 to cover the costs of insulation. |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">Program 8.</div> | Homeowners who insulate their homes would be eligible for a government loan for the insulation costs at an interest rate of 5 per cent per year. The loan would be paid back over a three-year period. |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">Program 9.</div> | All highway speed limits in Canada to be set at 55 miles per hour (90 kilometers per hour). These speed limits would be strictly enforced and violators would lose their license for six months after two violations. |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">Program 10.</div> | A commuter computer service where individuals who want carpool partners would phone a central number and provide the receptionist with the information concerning location of house and work places, etc. A computerized match list is mailed to the individual within two working days. The cost of this service (\$5 per commuter) would be paid by the government. |

The responses obtained (Table 3.4) gave rise to four principal conclusions;

- Respondents were in general favorably disposed towards the programs presented to them. Clearly however, they view as least acceptable those which would require direct payments on their part. Those paid for indirectly, that is by government, were judged much more acceptable.
- Home insulation grants in the amount of \$800 were rated as both the most acceptable and most important of the ten programs. Surprisingly, similar grants of \$1200 were rated lower in both categories. Although the reasons for this finding could not be explored in this study, it appears that respondents feel there should be some upper limit on the amount of grants made available by government.
- Females consistently rated all programs as both more acceptable and more important than did male respondents. This result is consistent with earlier findings that women tend to view energy conservation more seriously than do men. This finding is examined in greater detail in a following section.
- The most serious divergence in the views of males and females occurred with respect to the acceptability of 55 mph speed limits. An examination of the distribution of responses revealed that responses to this program contained an unusual number of persons at the opposite extremes of the scale. In the case of males, these extremes were roughly balanced (27% completely unacceptable vs 32% completely acceptable), while in the case of females there was a much stronger tendency to favor the program at the extremes (36% vs 16%).

CONSUMER VIEWS ON DIFFERENT POLICY DIRECTIONS AND PROGRAM PHILOSOPHIES

Section 2 of the male/female questionnaire attempted to gain insight into the general characteristics which Canadians believe should be incorporated into consumer energy conservation policies and programs. To achieve this objective respondents were presented with a series of statements of the form "Consumer (Home) Energy Conservation Programs Should. . . ." and asked to indicate the extent of the agreement/disagreement with each statement on a six point scale (1 = definitely disagree/6 = definitely agree). The specific statement and the median response ratings for both males and females are given in Table 3.5.

An examination of these median response ratings reveals that consumers are most in favor of conservation policies/programs which;

- . Require the labelling of all new autos and appliances indicating their energy requirements.
- . Set minimum energy performance standards for autos and appliances.
- . Provide information on how to choose energy efficient products and reduce their automobile gasoline consumption.
- . Provide grants or tax credits for the purchase/installation of energy conserving products.
- . Are directed at home builders and manufacturers rather than consumers.
- . Are focused on regions of Canada having the coldest climate.

Conversely, consumers least support conservation programs which;

- . Permit energy prices to rise, thus forcing reduced consumption.
- . Use price increases rather than rationing to lower energy use.
- . Are available only to households with annual incomes below \$15,000.
- . Limit energy consumption for leisure and vacation travel.

COMPARISONS ACROSS REGIONS OF CANADA

The size and diversity of the Canadian nation have traditionally given rise to differing viewpoints on a number of issues and those differences frequently influence the shape and content of national policies. With this in mind, it was felt useful to determine the nature and extent of any such differences which might exist in relation to views on consumer energy conservation policies and programs.

COMPARISON OF ACCEPTABILITY OF ENERGY CONSERVATION PROGRAMS

An analysis of the average ratings accorded to each of the 10 conservation programs presented to participants in this study (see Table 3.6) gave rise to the following major conclusions;

- . significant and substantial differences in acceptability were found to exist across regions for about one-half of the programs studied
- . those programs for which there was generally a national consensus of views included;
 - Home-Audits paid for entirely by the homeowner. In this case there was general opposition across the country.
 - Do-It-Yourself Home Energy Audit Kits. These were viewed as generally acceptable in all parts of the country. The one notable exception to this observation was the lower level of support accorded by females in Quebec.
 - Low Interest Home Insulation Loans. Such loans were seen as equally acceptable in all regions of Canada. The major area of divergence of views occurred in the cases of British Columbia and Alberta where women in B.C. judged such loans as most acceptable and women in Alberta viewed them as least acceptable.
 - 55 mph Speed Limits. In this case, while acceptance can be viewed as only modest, it was generally similar in all parts of the country.
- . those programs where significant differences in acceptability were found included;
 - Government Financed Home Audits. This type of program was as much more acceptable in Quebec and the Atlantic region than in Alberta.
 - Government Subsidized Home Audits. These were viewed as less acceptable in Alberta by a substantial margin.
 - Computer/Questionnaire Audit. Such a program was also viewed as less acceptable in Alberta than in other parts of the country, particularly Quebec and the Atlantic region.
 - Insulation Grants. In the case of \$800 grants the greatest contrast in views occurred between the Prairies (least acceptable) and Quebec (most acceptable). For grants of \$1200 the greatest divergence was found to exist between Ontario (particularly males) and the Quebec/Atlantic regions.

COMPARISON OF IMPORTANCE OF CONSERVATION PROGRAM CHARACTERISTICS

As examination of the importance accorded to 23 different characteristics which might be the focus of conservation programs in Canada revealed areas of both consensus and substantial disagreement across regions of the country (see Table 3.7).

In general, there was a national consensus concerning;

- who should pay for home conservation programs. All parts of the country tended to equally support programs paid for partly by government and partly by users.
- the extent to which home conservation programs should be available to and subsidized for low income households.
- the need for the labelling of all new appliances and automobiles showing how much energy each item consumes during operation.
- the desirability of permitting energy prices to rise to the point where consumers would be forced to use less energy. Some differences did exist here in the case of males; Alberta men supported such a policy to a significantly greater degree than others, particularly those in the Atlantic region.
- the desirability of directing conservation programs at manufacturers of energy consuming products and homebuilders rather than consumers.
- the need for more concern with reducing automobile gasoline consumption rather than reducing energy used for home heating.
- the need to focus on reducing oil rather than natural gas or electricity consumption.
- the undesirability of using price increases rather than rationing to achieve lower levels of energy use.

In those cases where significant differences in viewpoints were found to exist across the country, these appeared to derive from two main sources. First, there were differences that appeared to reflect an economic dimension. Second, there were divergencies that seemed to involve an ideological dimension concerning the extent to which government intervention is necessary or desirable.

The contrasting views related to the economic dimension were most apparent in the ratings accorded to three characteristics by consumers from Alberta and the Atlantic region. Specifically; Atlantic region respondents were much more in favor of programs which are;

- . concentrated on poorer regions of Canada
- . aimed at regions of Canada which depend on fuel oil for home heating
- . designed to restrain energy price increases

In the case of contrasting viewpoints derived from ideological considerations, the most pronounced differences occurred between the provinces of Alberta and Quebec. Here, Quebec was significantly more in favor of policies and programs which;

- . are paid for by government rather than users
- . require all home owners to modify homes to meet energy efficiency standards
- . require all automobiles to obtain a minimum of 28 miles per gallon
- . include laws requiring all cars to have at least two tune-ups per year
- . provide information booklets to help people learn how to reduce their automobile gasoline consumption
- . provide a system of government grants or tax credits to encourage the purchase/installation of energy conserving products
- . require all consumers to reduce their energy consumption by equal amounts
- . require heavy energy users to cut back their consumption more than light energy users
- . require all dwellings to undergo an energy audit.

In addition to the above consistent pattern of extreme views there was a single case where the greatest divergency of views occurred between Ontario and Quebec. In this case, Ontario consumers were the most strongly

opposed of all regions to restrictions of energy consumption for the purposes of leisure and vacation travel. Conversely, Quebec consumers were more in favor of this form of restriction than were Canadians from other regions.

COMPARISONS ACROSS INCOME GROUPS

The formulators of consumer energy conservation policies are constantly faced with the problem of determining the impact of these policies on different income groups within the population. In view of this concern, the consumer views collected in this study were examined for possible differences in perception which might be helpful in anticipating reactions to alternative conservation actions.

COMPARISON OF ACCEPTABILITY OF ENERGY CONSERVATION PROGRAMS

When the acceptability ratings for each of the 10 programs included in this study were compared across groups of household having different annual household incomes, it was found that significant variations existed in five cases (see Table 3.8). In general, ratings were similar across income groups for those programs having the highest overall level of acceptability. These programs included;

- . Home Audits financed by Governments
- . Computer/Questionnaire Audits
- . Do-It-Yourself Home Audit
- . Insulation Grants of \$800 and \$1200

In contrast, inter-income group differences concerning acceptability occurred for the following programs;

- . Home Audits Subsidized by Government and Home Audits Paid for by the Homeowner. In both of these cases the acceptability of the suggested action rose with increasing income, indicating a willingness and/or ability of higher income households to assume the costs associated with energy audits.
- . Low Interest Home Insulation Loans. Again higher income households accorded higher ratings of acceptability to this suggestion than did lower income households.
- . 55 mile per hour Speed Limits. In contrast to the above cases, support for this program decreased with rising household income. This relationship was particularly strong for male respondents.
- . Commuter Computer Service. In the case of females there were no significant differences in acceptability ratings. While such differences did exist for males, the effect of income was not particularly strong.

COMPARISON OF IMPORTANCE OF CONSERVATION PROGRAM CHARACTERISTICS

The results of this analysis were particularly revealing and provided a number of important conclusions having important implications for the formulation of consumer energy conservation policies. As can be seen from Table 3.9, the level of respondent agreement with the suggested program characteristics declined systematically with increasing household income. The only two exceptions to this general observation occurred in the cases of suggestions to permit energy prices to rise to force conservation and to employ prices increases rather than rationing to achieve lower energy consumption.

To summarize, a very clear picture emerged from this analysis. Low income households are much more in favor of government assistance to achieve energy savings and are more prepared to accept laws and programs which force or encourage such savings. Conversely, those households having higher incomes prefer to allow the price mechanism to force energy savings,

reflecting the reality that they are better equipped to absorb higher prices without making major changes in their lifestyle.

COMPARISONS OF MALE/FEMALE VIEWS

A number of earlier studies have consistently shown that females appear to be more positively inclined towards energy conservation than are males. For this reason, it was felt important to separate and compare male and female responses. In the case of this study, the goal was to confirm this general finding and to measure the extent of its importance in relation to the views examined.

COMPARISONS OF ACCEPTABILITY OF ENERGY CONSERVATION PROGRAMS

As seen from Table 3.10, male/female ratings of the acceptability of the programs presented to respondents were significantly different in 7 of the 10 cases. In all instances, females viewed the programs as more acceptable than males, thus supporting the view that women attach greater importance to energy conservation than do men.

COMPARISON OF IMPORTANCE OF ENERGY CONSERVATION PROGRAM CHARACTERISTICS

A comparison of the extent to which men and women agreed on the desirability of various conservation program characteristics revealed both similarities and differences of views. For those characteristics contained in Part 1 of the questionnaire concerning home energy conservation programs, there was a high degree of consensus between male and female respondents (Table 3.11). The only minor divergency of views concerned the extent to which programs should be jointly paid for by users and by government. Here, women were somewhat more in agreement with this approach

than were men.

In the case of the more general characteristics contained in Part 2 of the questionnaire, it was found that statistically significant differences in viewpoints existed for 7 of the 16 items. Specifically, women were more in agreement with programs which;

- . require modification of all homes to meet energy efficient standards
- . require all cars to obtain 28 mpg by 1983
- . provide booklets on energy efficient products
- . establish laws requiring automobile tune-ups
- . require heavy consumers to cut back their consumption more than low energy users

Conversely, men indicated a relatively greater degree of support for programs which;

- . permit energy prices to rise until people are forced to consume less energy
- . focus on reducing oil rather than natural gas and electricity consumption

CONCLUSIONS

Now that conservation has been recognized as an essential part of the Canadian effort to balance energy supply and demand in the coming decades, there is a need for direction as to the most economically effective and most socially acceptable means of achieving conservation goals. This study, which is part of an ongoing consumer energy research program, has specifically attempted to provide such direction. In addition, it has also sought to provide some insight into the evolving behavior and energy use patterns of Canadian consumers over the past two years.

In broad terms, the findings of the study revealed that certain types of conservation programs are clearly preferred over others by both consumers

and professionals in the field. Specifically, the following approaches to energy conservation were viewed favorably by both groups:

- . information and labelling programs which provide practical guidance when purchasing energy consuming products;
- . standards which define minimum levels of energy efficiency for new homes, cars and appliances;
- . home audit programs to assist householders in identifying the most effective means of conserving energy in their particular home;
- . a system of grants and/or tax incentives to homeowners to encourage and assist them to carry out the energy conservation actions and retrofitting identified through audit programs.

In summary, it appears that some progress is being made in attempts to bring about energy conservation in its consumer sector--but much remains to be accomplished. Barriers such as the relative inefficiency of the existing housing and automobile stock, resistance to behavioral change by consumers, and concerns for social equity all combine to impede efforts to reduce energy consumption in Canada. It is hoped that the findings of this study will provide some important initial guidance for eliminating at least some of these impediments.

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Table 3.1
TYPE AND DISTRIBUTION OF RESPONSES
TO SET OF THREE QUESTIONNAIRES

<u>Questionnaire Set</u>	<u>No. of Responses</u>	<u>Percentage of Total Sample</u>
Male/Female/Household	1148	79.1
Female/Household	269	18.5
Male/Household	10	0.7
Household Only	15	1.0
Male/Female Only	6	0.4
Female Only	3	0.2
Total	<u>1451</u>	<u>100.0</u>

. No. of Questionnaires Mailed - 1838
. Response Rate - 78.9%

Table 3.2
DISTRIBUTION OF SAMPLES BY PROVINCE (1978-1980)

<u>Province</u>	% of Sample (1978)	% of Population ^a (1976)	Difference	% of Sample (1980)	% of Population ^b (1980)	Difference
	[N = 2366]			[N = 1451]		
Newfoundland	.6	2.4	-1.8	0.8	2.4	-1.6
Prince Edward Island	1.0	0.5	+0.5	1.0	0.6	+0.4
New Brunswick	3.0	2.9	+0.1	3.4	3.0	+0.4
Nova Scotia	4.6	3.6	+1.0	5.4	3.6	+1.8
Quebec	26.0	27.1	-1.1	26.0	26.3	-0.3
Ontario	37.2	35.9	+1.3	33.0	35.8	-2.8
Manitoba	5.4	4.4	+1.0	5.4	4.3	+1.1
Saskatchewan	3.8	4.0	-0.2	4.5	4.1	+0.4
Alberta	7.2	8.0	-0.8	7.0	8.8	-1.8
British Columbia	11.1	10.7	+0.4	13.2	11.1	+2.1
Total	100.0	100.0		100.0	100.0	

a - Canada Handbook, 1978, p. 40.

b - Globe and Mail, Report on Business, January 1981.

Table 3.3ADISTRIBUTION OF SAMPLES BY HOME OWNERSHIP (1978-1980)

Nature of Ownership	% Sample (1978)	% Population ^a (1976)	Difference	% Sample (1980)
	[N=2366]			[N=1451]
Own	84.8	61.8	+23.0	87.1
Rent	15.2	38.2	-23.0	12.9
Total	100.0	100.0		100.0

a - 1976 Census, 4-11.

Table 3.3B
HOME DESCRIPTORS

<u>Description</u>	<u>Sample '78</u>	<u>Sample '80</u>
Average age of dwelling	27.9	31.3
Type of dwelling:	Percent of Sample	
Single detached	75.9	79.8
Semi-detached and townhouse	12.9	11.1
Apartment	8.6	6.9
Other	2.6	2.2
Finished rooms:	Mean Number of Rooms	
Main floor (100% of sample)	4.73	4.75
Basement (48.2% of sample/46.9%)	2.10	2.06
2nd floor (40.7% of sample/38.7%)	3.28	3.30
3rd floor (3.8% of sample/3.5%)	2.84	2.98
Total dwelling	7.18	7.20
Garage:	Percent of Sample	
Attached	23.8	23.3
Detached	27.2	30.0

Table 3.3C
DISTRIBUTION OF SAMPLES BY LANGUAGE USED (1978-1980)

<u>Language</u>	% of Sample (1978)	% of Population ^a (1976)	Difference	% of Sample (1980)	% of Population ^b (1979)	Difference
	[N = 2366]			[N = 1451]		
English	77.7	67.0	+10.7	77.7	61.4	+16.3
French	21.5	25.7	-4.2	21.5	25.6	-4.1
Other	0.8	7.3	-6.5	0.8	13.0	-12.2
Total	100.0	100.0		100.0	100.0	

^a - Canada Year Book, 1976, p. 191.

^b - Handbook of Canadian Consumer Markets, 1979
 Conference Board of Canada, p. 29.

Table 3.3D
DISTRIBUTION OF SAMPLES BY AGE OF HOMEMAKER (1978-1980)

Age	% of Sample (1978)	% of Population ^a (1976)	Difference	% of Sample (1980)	% of Population ^b (1980)	Difference
	[N = 2366]			[N = 1451]		
Under 25	6.3	8.2	-1.9	5.2	13.0	-7.8
25 - 34	26.0	23.4	+2.6	21.9	23.9	-2.0
35 - 44	17.9	18.7	-0.8	17.3	20.5	-3.2
45 - 54	18.3	18.2	+0.1	21.3	14.7	+6.6
over 55	31.4	31.5	-0.1	34.3	29.9	+4.4
Total	100.0	100.0		100.0	100.0	

a - 1976 census data.

b - Handbook of Canadian consumer Markets 1979
 Conference Board of Canada, p. 22.

Table 3.3E

DISTRIBUTION OF SAMPLES BY TOTAL HOUSEHOLD INCOME (1978-1980)

Income	% of Sample (1978)	% of Population (1978)	Difference	% of Sample (1980)	% of Population ^a (1979)	Difference
	[N = 2366]			[N = 1451]		
< \$3,000	1.5	1.4	+0.1	1.2	1.6	-0.4
\$ 3,000 - 9,999	22.1	17.4	+4.7	16.1	15.2	+0.9
\$10,000 - 14,999	18.1	12.5	+5.6	12.3	10.8	+1.5
\$15,000 - 24,999	35.9	34.0	+1.9	32.3	30.9	+1.4
> \$25,000	22.4	34.7	-12.3	38.1	41.5	-3.4
Total	100.0	100.0		100.0	100.0	

a - Handbook of Canadian Consumer Markets, 1979
Conference Board of Canada, p. 100.

Table 3.3FTOTAL NUMBER OF PERSONS IN HOUSEHOLD (1980)

<u>No. of Persons</u>	<u>No. of Households</u>	<u>Percentage of Total Sample</u>
1	55	3.8
2	523	36.5
3	287	20.0
4	354	24.7
5	141	9.8
6 or more	73	5.1
Total	1433	100.0

No Answer - 18

Table 3.3GMARITAL STATUS OF HOUSEHOLD MEMBERS

<u>Marital Status</u>	<u>No. of Households</u>	<u>Percentage of Total Sample</u>
Married	1264	88.1
Single	9	0.6
Widowed	105	7.4
Divorced/Separated	50	3.5
Common Law	<u>6</u>	<u>0.4</u>
Total	1434	100.0

No Answer - 17

Table 3.3H
SAMPLES VERSUS POPULATION, SELECTED DEMOGRAPHICS

	<u>Sample '78</u>	<u>Population</u>	<u>Sample '80</u>
Mean number in household	3.45	3.1 ^a	3.17
Percent of sample that are married	91.0	75.6 ^b	88.1
Median education of female head	Secondary school Graduate	Some Secondary ^c Schooling	Secondary School Graduate
Median education of male head	Secondary school Graduate	Some Secondary ^a Schooling	Secondary School Graduate
Employment of female head	60.2% not outside household	47.2% not outside ^d household	57.5 not outside household
Employment of male head	71.8% full-time 77.7% labor force participation rate ^a	82.9% full-time ^d 77.7% labor force participation rate ^e	67.3 full-time

a 1976 Census Data, 15-1

b 1976 Census Data, 39-1

c 1976 Census Data, 5-1

d The Labour Force, February, 1979, p. 22

e Handbook of Canadian Consumer Markets, 1979, The Conference Board of Canada, p. 71.

Table 3.3IDISTRIBUTION OF SAMPLES BY CITY SIZE (1978 - 1980)

<u>City Size</u>	% of Sample (1978)	% of Population ^a (1976)	Difference	% of Sample (1980)	% of Population ^b (1979)	Difference
	[N = 2366]			[N = 1451]		
Rural/Under 1000	21.0	27.5	-6.5	22.3	24.5	-2.2
1000 - 9,999	11.0	6.8	+4.2	12.1	9.3	+2.8
10,000 - 29,999	7.6	7.3	+0.3	7.2	7.1	+0.1
30,000 - 99,999	7.9	7.2	+0.7	8.2	7.9	+0.3
100,000 - 499,000	15.1	18.1	-3.0	15.2	13.8	+1.4
over 500,000	37.4	33.1	+4.3	35.0	37.0	-2.0
Total	100.0	100.0		100.0	100.0	

a - 1976 census data.

b - Handbook of Canadian Consumer Markets 1979
Conference Board of Canada, pp. 30-31.

Table 3.3J
EMPLOYMENT STATUS OF HOUSEHOLD MEMBERS (1980)

<u>Employment Status</u>	<u>Female Head</u>		<u>Male Head</u>	
	<u>No.</u>	<u>% of Sample</u>	<u>No.</u>	<u>% of Sample</u>
Paid Full-Time	281	20.9	825	67.3
Paid Part-Time	289	21.5	88	7.2
No Paid Employment	<u>772</u>	<u>57.5</u>	<u>312</u>	<u>25.5</u>
Total	1342	100.0	1225	100.0
No Answer -	109		226	

Table 3.5

CONSUMER VIEWS ON POLICY DIRECTIONS AND
PROGRAM PHILOSOPHIES FOR ENERGY CONSERVATION

<u>Part 1 - Home Energy Conservation Programs</u>		
CONSUMER HOME ENERGY CONSERVATION PROGRAMS SHOULD. . .	Median Response	
	Male	Female
Be Concentrated in Poorer Regions of Canada	3.22	3.24
Be Focused on Regions of Canada Having The Coldest Climates	4.74	4.71
Be Aimed at Regions of Canada Which Depend on Fuel Oil for Home Heating	4.22	4.28
Be Available Only to Households Having Total Annual Incomes Below \$15,000	2.27	2.19
Be Paid for by Those Consumers Who Use Them, Not by the Government	3.26	3.25
Be Paid for Partly by Consumers Who Use Them and Partly by Governments From Tax Revenues	3.95	3.86
Be Subsidized by Governments for Low Income Households Only	3.90	3.81
 <u>Part 2 - General Energy Conservation Programs</u>		
CONSUMER ENERGY CONSERVATION PROGRAMS SHOULD. . .		
Require All Home Owners to Modify Existing Homes to Meet Energy Efficiency Standards in Areas Such as Insulation, Furnace Efficiency, Weatherstripping, etc., by 1983	4.11	3.89
Require All Automobiles Sold in Canada to Obtain a Minimum of 10 km/litre (28 Miles per Gallon) by 1983	5.56	5.57
Require All New Appliances and Autos to Have Labels Attached to Them Which Show how Much Energy They Use	5.70	5.70

Table 3.5 (continued)

Provide Information Booklets For Consumers to Encourage Them to Choose Energy Efficient Products when Shopping	5.69	5.63
Require By Law, All Cars to Have Two Tune-Ups Each Year to Improve Engine Efficiency	3.89	3.45
Permit Energy Prices to continue to Rise Until People Feel Forced to Consume Less Energy	2.00	2.11
Provide Information Booklets to Help People Learn How to Reduce Their Auto Gasoline Consumption	5.44	5.34
Provide a System of Grants or Tax Credits That Would Apply to the Purchase or Installation of Energy Conserving Products	4.87	4.86
Be Directed at Manufacturers of Energy Consuming Products and Home Builders Rather than Consumers ...	4.74	4.83
Be More Concerned with Reducing Automobile Gasoline Consumption than Reducing Energy Used for Home Heating	3.70	3.75
Be Focused on Reducing Oil Rather than Natural Gas and Electricity Consumption	3.52	3.83
Be Designed to Severely Limit Energy Consumption for Leisure and Vacation Travel	3.07	2.97
Require All Consumers to Reduce Their Energy Consumption by Equal Amounts	3.29	3.23
Require Heavy Energy Users to Cut Back Their Consumption More Than Low Energy Users	4.35	4.13
Use Price Increases Rather Than Rationing To Achieve Lower Levels of Energy Use	2.60	2.68
Require All Dwellings to Undergo an "Energy Audit" To Determine How Much Energy is Being Used Inefficiently	4.04	3.91

Table 3.6

ACCEPTABILITY OF ENERGY CONSERVATION PROGRAMS
- COMPARISON ACROSS REGIONS OF CANADA -

Program No.	Program Identifier	Stat. Sig-nificance*	Sex	Region						Total Sample
				B.C.	Alta.	Prairies	Ontario	Quebec	Atlantic	
1	Home Audit/ Gov't	.00 .00	F M	3.99 3.53	3.70 3.39	3.90 3.81	3.96 3.65	4.60 4.42	4.42 4.33	4.15 3.89
2	Home Audit/ Subsidized	.00 .00	F M	3.56 3.11	3.03 2.91	3.46 3.21	3.48 3.23	3.93 3.66	3.43 3.48	3.57 3.32
3	Home Audit/ Homeowner	.08 .06	F M	2.14 2.10	1.95 2.12	2.53 2.58	2.19 2.16	2.20 2.25	2.14 1.95	2.20 2.19
4	Computer Audit	.03 .00	F M	4.81 4.60	4.39 4.10	4.45 4.54	4.63 4.21	4.84 4.76	4.84 4.39	4.69 4.44
5	Do-it- Yourself Audit	.01 .13	F M	4.37 4.30	4.14 4.18	4.19 4.60	4.41 4.05	3.95 4.12	4.18 4.23	4.22 4.19
6	Insulation Grant/\$800	.00 .01	F M	4.68 4.64	4.61 4.46	4.43 4.37	4.83 4.42	5.02 4.88	4.97 4.75	4.82 4.59
7	Insulation Grant/\$1200	.00 .00	F M	4.24 3.78	4.16 4.00	4.09 3.98	4.15 3.68	4.80 4.65	4.79 4.60	4.39 4.08
8	Insulation Loan/5%	.02 .46	F M	4.21 4.08	3.51 3.93	3.79 4.10	3.92 3.80	4.05 3.91	4.07 4.06	3.97 3.93
9	55mph Speed Limits	.25 .09	F M	4.13 3.69	4.07 3.60	4.15 3.82	3.87 3.38	4.18 3.84	4.11 3.63	4.05 3.64
10	Commuter Computer	.00 .01	F M	4.31 3.72	3.66 3.33	3.57 3.29	4.12 3.77	4.11 3.93	3.95 3.84	4.04 3.72

*Based on one-way analysis of variance.

Table 3.7

55

IMPORTANCE OF ENERGY CONSERVATION PROGRAM CHARACTERISTICS
- COMPARISON ACROSS REGIONS OF CANADA -

Characteristic	Stat. Sig.*	Sex	Region						Total Sample
			B.C.	Alta.	Prairies	Ontario	Quebec	Atlantic	
Part 1									
Concentrated in poorer Regions	.00	F	3.15	3.69 3.02	3.07	3.07	3.47	3.76 3.54	3.23
Focused on Colder Regions	.00	F	4.35 4.61	3.64 3.99	4.38 4.34	4.22 4.08	4.43 4.29	4.45	4.29
Aimed at Regions Depending on Fuel Oil for Heating	.00	F	4.17 4.28	3.34 3.42	3.96 3.81	3.95 3.93	4.03 3.94	4.34 4.54	4.00 3.99
Available only to Households < \$15000	.05 .02	F	2.75 2.73	2.67 2.86	2.82 2.88	2.90 2.46	2.80 2.71	2.86 3.07	2.69
Paid by Users not Government	.01 .00	F	3.38 3.51	3.29 3.49	3.53 3.69	3.38 3.48	3.04 2.87	3.23	3.27
Paid Partly by Users, Partly by Government	.02 .82	F	3.91 3.52	3.55 3.80	3.43 3.65	3.82 3.84	3.88 3.87	3.85 3.73	3.80
Gov't Subsidized for Low Income Only	.19 .14	F	3.82 3.78	3.69 3.97	3.68 3.84	3.55 3.50	3.85 3.71	3.74 3.79	3.71 3.69
Part 2									
Modify Homes to Minimum Energy Efficiency Standards	.00 .00	F	3.66 3.45	3.70 3.37	4.06 3.54	3.72 3.49	4.50 4.26	3.71 3.73	3.95 3.70
All cars Minimum of 28 mpg by 1983	.00 .00	F	4.90 4.73	4.78 4.57	5.07 5.03	4.97 4.78	5.43 5.33	5.04 5.10	5.08
All Products Labelled to Show Energy Usage	.57 .10	F	5.26 5.39	5.17 5.13	5.37 5.32	5.32 5.19	5.38 5.36	5.37 5.41	5.33
Booklets to Assist in Choice of Efficient Products	.00 .02	F	5.29 5.13	5.16 5.18	5.29 5.19	5.37 5.21	5.53 5.45	5.44 5.16	5.39
Law Requiring Two Tune-Ups per Year	.00 .00	F	3.43 2.97	3.26 2.87	3.56 3.20	3.46 2.98	4.53 4.16	3.88	3.77
Permit Energy Prices to Rise Significantly	.15 .00	F M	2.41 2.81	2.71 3.09	2.45 2.38	2.41 2.45	2.48 2.66	2.17 2.23	2.43 2.57
Booklets on How to Reduce Gas Consumption	.00 .00	F	4.99 4.84	4.76 4.76	4.83 4.86	4.93 4.82	5.24 5.23	4.98 5.03	5.00 4.96
Grants/Tax Credits for Purchase of Efficient Products	.00 .00	F	4.56 4.44	4.17 4.28	4.42 4.50	4.42 4.35	4.93 4.83	4.54 4.51	4.57
Aim Program at Manufacturers not Consumer	.19 .01	F	4.67 4.79	4.83 4.81	4.63 4.60	4.58 4.58	4.46 4.31	4.55 4.52	4.58 4.55
Aim at Gasoline Rather than Home Heating	.13 .01	F	3.66 4.09	3.52 3.50	3.84 3.75	3.55 3.53	3.78 3.65	3.53 3.68	3.65
Focus on Oil rather than Natural Gas/Electricity	.03 .02	F	3.64 4.05	3.18 3.48	3.42 3.80	3.36 3.66	3.48 3.53	3.70 3.86	3.45 3.70
Restrict Leisure/Vacation Travel	.00 .00	F	2.90 2.89	2.93 2.93	3.20 3.29	2.80 2.81	3.65 3.60	3.13	3.42
Require Equal Reductions for all Consumers	.00 .00	F	3.11 3.05	2.90 2.93	3.11	3.04 3.05	3.81 3.82	3.50	3.20
Require Heavy Users to Cut Back More	.02 .00	F	4.15 3.96	3.99 3.54	4.04 3.63	3.98 3.81	4.35 4.30	4.15	4.12
Use Price Increases Rather than Rationing	.32 .22	F	2.74 2.93	3.09 3.20	2.80 2.85	2.72 2.91	2.68 2.89	2.78 2.86	2.75 2.67
Require Energy Audit for All Dwellings	.00 .00	F	3.28 3.55	3.39 3.28	3.84 3.82	3.63 3.48	4.34 4.27	3.79 3.74	3.85 3.71

*Based on one-way analysis of variance.

Table 3.8

ACCEPTABILITY OF ENERGY CONSERVATION PROGRAMS
- COMPARISON ACROSS INCOME GROUPS -

Program No.	Program Identifier	Stat. Sig-nificance*	Sex	Annual Household Income Category					Total Sample
				< 10K	10-15K	15-20K	20-30K	>30K	
1	Home Audit/ Gov't	.67	F	4.04	4.11	4.17	4.26	4.18	4.17
		.82	M	3.75	3.88	3.92	3.91	3.99	3.91
2	Home Audit/ Subsidized	.00	F	3.27	3.45	3.47	3.74	3.76	3.59
		.01	M	2.99	3.30	3.18	3.36	3.62	3.34
3	Home Audit/ Homeowner	.10	F	2.06	2.04	2.18	2.17	2.36	2.19
		.01	M	1.84	2.41	2.05	2.18	2.32	2.17
4	Computer Audit	.26	F	4.53	4.63	4.82	4.81	4.73	4.72
		.35	M	4.36	4.67	4.53	4.50	4.32	4.45
5	Do-it- Yourself Audit	.32	F	4.07	4.09	4.37	4.30	4.28	4.24
		.88	M	4.09	4.17	4.11	4.24	4.24	4.19
6	Insulation Grant/\$800	.89	F	4.77	4.89	4.81	4.89	4.85	4.84
		.82	M	4.64	4.70	4.55	4.51	4.63	4.70
7	Insulation Grant/\$1200	.41	F	4.36	4.15	4.45	4.48	4.43	4.41
		.86	M	4.16	3.92	4.07	4.11	4.07	4.08
8	Insulation Loan/5%	.04	F	3.67	3.92	3.97	4.06	4.09	3.98
		.05	M	3.58	3.79	4.02	4.08	3.98	3.94
9	55mph Speed Limits	.00	F	4.52	4.52	4.10	3.85	3.78	4.07
		.00	M	4.26	4.34	3.89	3.39	3.05	3.60
10	Commuter Computer	.56	F	4.07	4.19	4.18	3.95	4.03	4.05
		.05	M	4.04	4.01	3.74	3.61	3.61	3.73

*Based on one-way analysis of variance.

Table 3.9
IMPORTANCE OF ENERGY CONSERVATION PROGRAM CHARACTERISTICS
- COMPARISON ACROSS INCOME GROUPS -

Characteristic	Stat. Sig.	Sex	Total Annual Household Income					Total Sample
			> 10K	10-15K	15-20K	20-30K	> 30K	
Part 1								
Concentrated in poorer Regions	.00	F M	3.65 3.64	3.38 3.72	3.45 3.54	3.06 3.05	2.82 2.73	3.21 3.21
Focused on Colder Regions	.05 .00	F M	4.54 4.61	4.25 4.48	4.31 4.45	4.32 4.16	4.10 4.06	4.29 4.28
Aimed at Regions Depending on Fuel Oil for Heating	.01 .02	F M	4.20 4.08	4.06 4.16	4.22 4.29	3.84 3.82	3.83 3.87	3.99 3.99
Available only to Households < \$15000	.00	F M	3.56 3.56	3.28 3.57	2.68 2.84	2.34 2.28	2.14 2.17	2.67 2.67
Paid by Users, not Government	.81 .86	F M	3.32 3.37	3.12 3.15	3.27 3.57	3.29 3.28	3.28 3.29	3.25 3.33
Paid Partly by Users, Partly by Government	.28 .88	F M	3.77 3.59	3.74 3.74	3.66 3.68	3.86 3.61	3.92 3.71	3.81 3.66
Gov't Subsidized for Low Income Only	.00 .00	F M	4.46 4.35	3.82 4.13	3.69 3.84	3.63 3.58	3.22 3.28	3.70 3.68
Part 2								
Modify Homes to Minimum Energy Efficiency Standards	.01 .00	F M	3.97 3.91	4.25 4.16	4.02 3.77	3.93 3.67	3.74 3.34	3.94 3.69
All cars Minimum of 28 mpg by 1983	.02 .00	F M	5.21 5.22	5.20 5.06	5.09 4.99	5.11 5.00	4.89 4.84	5.08 4.94
All Products Labelled to Show Energy Usage	.55 .03	F M	5.39 5.50	5.33 5.21	5.40 5.18	5.31 5.33	5.31 5.17	5.26 5.27
Booklets to Assist in Choice of Efficient Products	.57 .47	F M	5.46 5.33	5.47 5.34	5.38 5.17	5.35 5.28	5.38 5.21	5.40 5.25
Law Requiring Two Tune-Ups per Year	.00 .00	F M	3.96 3.69	4.18 3.82	3.83 3.55	3.62 3.19	3.53 3.00	3.76 3.34
Permit Energy Prices to Rise Significantly	.73 .00	F M	2.35 2.23	2.37 2.51	2.43 2.42	2.87 2.42	3.50 3.02	2.41 2.57
Booklets on How to Reduce Gas Consumption	.00 .00	F M	4.97 5.02	5.10 4.98	5.02 4.98	4.97 5.03	5.03 4.84	5.00 4.96
Grants/Tax Credits for Purchase of Efficient Products	.52 .59	F M	4.24 4.58	4.94 4.57	4.47 4.36	4.91 4.56	4.97 4.53	4.79 4.52
Aim Program at Manufacturers not Consumer	.17 .00	F M	4.71 4.67	4.55 4.58	4.70 4.57	4.53 4.57	4.49 4.32	4.58 4.55
Aim at Gasoline Rather than Home Heating	.00 .00	F M	3.99 3.98	3.73 3.79	3.58 3.81	3.56 3.50	3.47 3.47	3.63 3.65
Focus on Oil rather than Natural Gas/Electricity	.00 .00	F M	3.75 4.11	3.69 3.88	3.52 3.84	3.20 3.55	3.34 3.60	3.45 3.70
Restrict Leisure/Vacation Travel	.00 .00	F M	3.37 3.33	3.35 3.43	3.17 3.15	3.03 2.94	2.87 2.76	3.11 3.04
Require Equal Reductions for all	.25 .00	F M	3.27 3.29	3.54 3.66	3.25 3.47	3.29 3.27	3.19 2.92	3.29 3.26
Require Heavy Users to Cut Back More	.06 .00	F M	4.34 4.34	4.12 4.12	4.11 4.08	4.16 3.88	3.95 3.58	4.12 3.94
Use Price Increases Rather than Rationing	.00 .00	F M	2.56 2.68	2.35 2.63	2.82 2.84	2.73 2.77	3.02 3.22	2.74 2.87
Require Energy Audit for All Dwellings	.02 .72	F M	3.54 3.57	3.99 3.75	3.68 3.74	3.91 3.77	3.95 3.84	3.86 3.70

*Based on one-way analysis of variance.

Table 3.10
ACCEPTABILITY OF ENERGY CONSERVATION PROBLEMS
- COMPARISON OF MALE/FEMALE VIEWS -

Program No.	Program Identifier	Statistical Significance*	Sex	
			Male	Female
1	Home Audit/Government	.00	3.89	4.15
2	Home Audit/Subsidized	.00	3.32	3.57
3	Home Audit/Homeowner	.95	2.19	2.20
4	Computer Audit	.00	4.44	4.69
5	Do-it-yourself Audit	.35	4.19	4.22
6	Insulation Grant/\$800	.00	4.59	4.82
7	Insulation Grant/\$1200	.00	4.08	4.39
8	Insulation Loan/5%	.52	3.93	3.97
9	55 mph Speed Limits	.00	3.62	4.05
10	Commuter Computer	.00	3.72	4.04

*Based on t-tests.

Table 3.11
IMPORTANCE OF ENERGY CONSERVATION PROGRAM CHARACTERISTICS
- COMPARISON OF MALE/FEMALE VIEWS -

Characteristic	Statistical Significance*	Sex	
		Male	Female
Part 1			
Concentrated in Poorer Regions	.90	3.22	3.23
Focused in Colder Regions	.79	4.27	4.29
Aimed at Regions Depending on Fuel Oil	.90	3.99	4.00
Available to Incomes below \$15,000	.95	2.70	2.69
Paid by Users, not Government	.26	3.34	3.27
Paid by Users and Government	.01	3.66	3.80
Government Subsidized for Low Incomes	.79	3.69	3.66
Part 2			
All Homes Modified to Meet Standards	.00	3.70	3.95
All Cars > 28 mpg by 1983	.01	4.95	5.08
All Products Labelled to Show Energy Usage	.20	5.28	5.33
Booklets on Energy Efficient Products	.01	5.25	5.39
Law Requiring Car Tune-Ups	.00	3.35	3.77
Permit Energy Price to Rise	.01	2.57	2.43
Booklets on Reducing Gas Consumption	.30	4.96	5.00
Grants/Tax Credits for Efficient Products	.16	4.51	4.57
Aim Programs at Manufacturers and Consumers	.45	4.55	4.58
Aim at Gasoline not Home Heating	.66	3.67	3.65
Focus on Oil, not Natural Gas/Electricity	.00	3.70	3.45
Restrict Leisure/Vacation Travel	.20	3.06	3.11
Equal Reductions for All Consumers	.40	3.26	3.30
Heavy Consumers Cut Back More	.00	3.94	4.12
Price Increases rather than Rationing	.04	2.87	2.75
Energy Audit for All Dwellings	.01	3.71	3.85

*Based on t-tests.

APPENDIX I

ANNOTATED DIRECTORY OF ENERGY CONSERVATION PROGRAMS

ACKNOWLEDGEMENT

Over the past several years the government of Canada through the Department of Energy, Mines and Resources, and the Consumer Research Branch of the Department of Consumer and Corporate Affairs has supported an important program of studies in the area of behavioral energy research. This program centers on consumer consumption and conservation activities in the areas of residential and automobile energy applications.

The preparation of the Annotated Directory of Energy Conservation Programs was made possible by support received from this program. The work in the directory was part of a larger study dealing with energy conservation options. The researchers involved in this work very much appreciate the support received from the federal energy research program.

INTRODUCTION

This Directory comprises summaries of 34 consumer energy conservation programs in operation in Canada and the U.S. The programs are listed by area of focus (home heating and cooling, household appliances, private transportation, community involvement) in Exhibit 1.

The Directory has been designed to perform two functions. First, to draw together the essential elements of a number of energy conservation programs into a format useful for practitioners, researchers and policy-makers in this field. Second, to serve as the basic reference material in an on-going energy conservation study.

It should be noted that the Directory is neither exhaustive nor necessarily representative of the broad range of conservation programs that have been implemented. Although considerable effort was made to gather data on existing programs, it was clear as this volume was being finalized, further programs could be identified. Further, while care was taken to summarize each program accurately, the reader is advised that some of the details become dated.

Each summary contains information on the program objectives, operating details, results to date, costs and benefits, and source of funding. The organization responsible for developing and implementing the program is identified along with the key contact person who can provide any further details the reader may require. Specific and general background literature references are also provided.

In the process of compiling the Directory it became apparent that certain types of programs tend to dominate each of the four areas of focus. The provision of energy consumption and conservation information, through programs involving the mass media, booklets, demonstrations, labeling and audits, has clearly been the most favored path to energy conservation. The following list provides an indication of the main program emphases in each area.

Home Heating and Cooling Emphasis:

- Information campaigns focusing on home energy use and conservation tips
- Energy efficient demonstration homes
- Home audits to identify areas for insulation and other improvements
- Retrofitting of existing homes
- Development of energy conserving building standards, and incentives for builder to exceed these
- Alternative heating and cooling sources, particularly solar and wind
- Air-conditioning load cycling

Household Appliance Program Emphasis:

- Information campaigns focusing on appliance energy consumption and conservation tips
- Energy efficiency labeling for major appliances

Private Transportation Program Emphasis:

- Information campaigns focusing on automobile fuel consumption, driving skills, and car-care tips.
- Restrictions on automobile use, such as speed limits and gas rationing
- Automobile fuel efficiency standards
- Carpooling and vanpooling

Community Involvement Program Emphasis:

- Information campaigns focusing on the need to conserve, major conservation methods, and the importance of total community involvement
- Home audits and retrofitting
- Developing regional conservation standards

Finally, if the reader has comments and suggestions regarding the Directory, please contact one of the Directory Editors.

August 1980

J.D. Claxton, Vancouver

C.H.G. McDougall, Waterloo

J.R.B. Ritchie, Calgary

Exhibit 1: Directory Programs by Area of Focus

<u>INDEX</u>	<u>PROGRAM</u>	<u>PAGE</u>
<u>Home Heating</u>		
CAN-H-02	Home Planning Kit	1
US-H-21	Home Insulation Programs	2
CAN-H-22	ENERSAVE for Home Insulation	3
CAN-H-23	Canadian Home Insulation Program	4
US-H-24	Home Insulation, Energy Conservation Program	5
US-H-25	Home Energy Check	6
US-H-26	Home Conservation Requirement	7
CAN-H-27	Thermography Flyover	8
US-H-41	Memphis Solar Water Heating Demonstration	9
CAN-H-42	Solar Domestic Hot Water Demonstration	10
US-H-43	Passive Solar Home Project	11
US-H-61	Heat Pump Financing Program	12
CAN-H-62	Insulation Financing Program	13
US-H-63	Home Insulation Loan Program	14
US-H-64	California 55% Solar Tax Credit	15
US-H-65	Wisconsin Alternative Energy Tax Credit	16
US-H-81	Air-Conditioning Cycling Program	17
US-H-91	Manpower Training	18
US-H-101	Residential Energy Conservation Schedule	19
US-H-111	EnergyMark	20
<u>Household Appliance</u>		
CAN-A-01	ENERGUIDE	21
<u>Private Transportation</u>		
US-T-01	Project Pool It	22
US-T-02	Commuter Computer	23
INT-T-21	Speed Limits	24
CAN-T-31	Operation Tune-Up	25
INT-T-41	Carless Days	26
INT-5-51	Restrictions on Gasoline Retail Sale Hours	27
CAN-T-61	Canada's Emergency Gas Rationing Plan	28
<u>Community Involvement</u>		
US-C-01	US Federal Standby Emergency Energy Conservation Plan	29
CAN-C-11	Eneraction	30
CAN-C-12	Total Community Energy Conservation Project	31
US-C-21	Portland Energy Conservation Project	32
US-C-22	Fitchburg Action to Conserve Energy	33
CAN-C-31	Public Energy Conservation Information Program	34

PROGRAM NAME:

Home Planning Kit

INDEX NUMBER:CAN-H-02
July, 1980ORGANIZATION:

BC Hydro

PROGRAM TYPE:Voluntary
Non-financial
General Home
RegionalCONTACT:Dr. Tim Newton
Energy Conservation Division
BC Hydro
970 Burrard Street
Vancouver, BC V6Z 1Y3
Tel: (604) 663-3583PROGRAM DESCRIPTION:

An energy efficiency aid for home builders & remodellers, the kit comprises 6 booklets which contain energy efficiency ideas & guidelines, and expected savings from each recommendation (cost of operation tables).

Areas covered are:

1. General conservation
2. Heating systems & insulation
3. Kitchen & laundry planning
4. Lighting & wiring
5. Water heating
6. Solar energy

COSTS-BENEFITS:

Unknown

MAJOR RELATED LITERATURE REFERENCES:

1. Quelch, John A. and Peter Thirkell, "Builders as Consumers: Their Role in Residential Sector Energy Conservation", in R.A. Fazzolone and C.B. Smith (eds.), Changing Energy Use Futures, Pergamon Press, New York, 1979.
2. Lengyel, Dorothy L., Selected Energy Conservation Options for the Home, Per State University, Cooperative Extension Service, 1978.

PROGRAM NAME:

Home Insulation Program (HIP)

INDEX NUMBER:

US-H-21

July, 1980

ORGANIZATION:

Tennessee Valley Authority

PROGRAM TYPE:CONTACT:

David B. Lamb

Tennessee Valley Authority

Power Service Center - 6

Chattanooga, Tennessee 37401

Tel: (615) 755-3656

Voluntary

Financial

Home Audit

Regional

PROGRAM DESCRIPTION:

TVA developed and launched HIP in August 1977 to assist consumers save money by reducing residential energy consumption, to reduce TVA's fuel costs and to delay the need for additional generating capacity. Conducted in cooperation with all 160 distributors of TVA power, the program provides onsite inspections of residential dwellings and no-interest loans for weatherization measures.

Regardless of the type of fuel used in heating or cooling a home, all residential consumers (including tenants, landlords and mobile home residents) are eligible for the free home audit conducted by 350 TVA trained energy advisors. The advisor discusses weatherization improvements, their costs and benefits, the no-interest loan financing available, and provides a list of TVA approved local installation contractors.

No-interest weatherization loans are available for electrically heated/cooled homes and cover materials and labor to a maximum of \$2000. Repayment is made in equal payments on the consumer's electricity bill for a period up to 7 years (determined by the loan amount and the consumer).

As of March 31, 1980, nearly 200,000 homes had been surveyed, over 80,000 dwellings had received loans (average = \$1000), and nearly 300 million kWh were being saved annually by loan customers. Program goal is to weatherize over 500,000 homes by 1987.

COSTS-BENEFITS:

By 1987 HIP is expected to produce annual energy savings of 2.54 billion kWh, annual consumer benefits of \$89 million, and to save 1071 megawatts of peak demand for the TVA power system at a total estimated program cost of \$214 million.

MAJOR RELATED LITERATURE REFERENCES:

1. Tennessee Valley Authority Program Summary, Division of Energy Conservation and Rates, April 1980.
2. Meier, Alan K. "Measuring Residential Energy Conservation." In R. A. Fazzolare and C. B. Smith (eds.), Changing Energy Use Futures, Permagon Press, New York, 1979.
3. Coney, Kenneth A. and Bruce J. Walker, "Defining and Predicting the Diffusion of the Residential Energy Audit". Paper to be presented at the International Conference on Consumer Behavior and Energy Use, Banff, Alberta, September 1980.

PROGRAM NAME:

ENER\$AVE For Home Insulation

INDEX NUMBER:CAN-H-22
July, 1980ORGANIZATION:

Conservation & Renewable Energy Branch, ENR

PROGRAM TYPE:CONTACT:

Ron Argue
ENER\$AVE Program
Energy, Mines & Resources
580 Booth Street
Ottawa, Ontario K1A 0E4
Tel: (613) 995-1801 or Heatline: (800) 267-9563

Voluntary
Non-financial
Home Audit
National

PROGRAM DESCRIPTION:

Introduced in September, 1977, ENER\$AVE offers free home audits and telephone information services to help Canadian homeowners save energy and money through improved home insulation.

All owners of detached, semi-detached and row houses (up to a maximum of three storeys) are eligible for a free computer analysis of their home's insulation requirements.

Homeowners complete a 32-point questionnaire on their dwellings's structure and heating characteristics (e.g., age, construction, size and shape, existing insulation, type of heating fuel, winter thermostat settings, etc.) and send it to Ottawa for computer processing. In return they receive, through the mail, a set of recommended home insulation procedures, their individual material and labor costs, projected savings, and payback periods, as well as advice on how to get financial assistance.

As a complement to the computer analysis service, ENER\$AVE operates a national toll-free Heatline, providing technical advice on home insulation, details on federal and provincial grants and loan programs and general household energy conservation information.

MAJOR RELATED LITERATURE REFERENCES:

1. Meier, Alan K., "Measuring Residential Energy Conservation", in R.A. Fazzolare and C.B. Smith (eds.), Changing Energy Use Futures, Pergamon Press, New York, 1979.
2. Coney, Kenneth A. and Bruce J. Walker, "Defining and Predicting the Diffusion of the Residential Energy Audit. Paper to be presented at the International Conference on Consumer Behavior and Energy Use, Banff, Alberta, September 1980.

PROGRAM NAME:

Canadian Home Insulation Program (CHIP)

ORGANIZATION:

Canadian Mortgage & Housing Corp.

CONTACT:

Andre Lagne
Manager, CHIP
P.O. Box 700
St. Laurent Postal Station
Montreal, Quebec H4L 5A8
Tel: (514) 341-1230

INDEX NUMBER:

CAN-H-23
July, 1980

PROGRAM TYPE:

Voluntary
Financial
Retrofit Financing
National

PROGRAM DESCRIPTION:

The CHIP grant is available on application by the homeowner once the insulation (or weatherstripping, caulking, etc.) has been completed. The homeowner attaches contractor invoices to his grant application and receives a cheque from CMHC. The grant is taxable and must be declared as income by the applicant. The grant applies to principal residences (not vacation homes) that are homes or apartments of 3 storeys or less, and built before 1961 (1977 in Yukon and Northwest Territories). The CHIP grant covers the full cost of insulation (weather caulking, etc.) materials to a maximum of \$350 per unit and 1/3 of labour costs to a maximum of \$150 per unit.

COSTS-BENEFITS:

The program is funded federally through CMHC. Since its introduction in September, 1977, approximately 10% of eligible homeowners have applied for the CHIP grant. The average net cost per loan is \$265, average grant \$320, processing costs, \$25, tax recovery \$80.

MAJOR RELATED LITERATURE REFERENCES:

1. Meier, Alan K., "Measuring Residential Energy Conservation", in P.A. Fazzolare and C.B. Smith (eds.), Changing Energy Use Futures, Pergamon Press, New York, 1979.

PROGRAM NAME:

Home Insulation & Energy Conservation Act

INDEX NUMBER:US-H-24
July, 1980ORGANIZATION:

New York State Department of Public Service

PROGRAM TYPE:CONTACT:

Ms. Shirley R. Anderson
 Senior Energy Efficiency Analyst
 Office of Research, Public Service Commission
 3rd Floor, Agency Building 3
 Empire State Plaza
 Albany, New York 12223
 Tel: (518) 474-1931

Voluntary
 Financial/non-financial
 Home audit
 Regional

PROGRAM DESCRIPTION:

Initiated as a New York State project in June 1978, the HIEC program offers customers three types of home energy audits:

- A. A trained utility representative visually inspects the home, the utility processes the data and mails results and recommendations to the customer who is charged \$10.
- B. The customer collects the data using utility instructions, the utility processes the data and mails out results and recommendations. Customer is charged \$3.
- C. The customer completes the audit using utility instructions, and analyzes data with an energy workbook. No fee is charged.

All homeowners or renters receiving electric or gas service on a residential classification and residing in a 1-4 family house are eligible for the audits which cover home insulation, heating and structural characteristics. Analysis identifies areas for conservation savings and provides recommendations for cost-effective improvements. A list of local approved insulation contractors, who must give a one-year guarantee on workmanship, materials and meet other professional and business standards, is also provided with these recommendations.

Utilities organize local banks to make low-interest loans available to the customers for the energy conservation improvements. Loans are made by two-party cheque, endorsed by both customer and contractor. The program is backed by multi-media advertising, direct mail brochures to utility customers, selected use of thermography, and neighborhood outreach efforts.

In the first year of the program 15,000 customers requested a Type-A audit, 3,000 a Type-B, 90,000 the Energy Workbook, and 536 loans totalling \$800,000 were financed.

COSTS-BENEFITS:

Net audit costs (Type A = \$82, Type B = \$62), media advertising and thermography costs are borne by taxpayers. New York data for October 1978 to March 1979 indicated total program costs of \$950,000 and total savings of \$620,000 with similar on-going savings expected.

MAJOR RELATED LITERATURE REFERENCES:

1. Anderson, S. R., New York State Home Insulation & Energy Conservation Act Program, 1979 Interim Report, New York State Department of Public Service, September, 1979.
2. National Energy Conservation Policy Act, Public Law 95-619, 92 Statute 3206 (1978).

PROGRAM NAME:

Home Energy Check

INDEX NUMBER:US-H-25
July, 1980ORGANIZATION:

Seattle City Light

PROGRAM TYPE:CONTACT:Robert M. Gregson
Manager, Consumer Advisory and Conservation Services
Seattle City Light
1015 Third Avenue
Seattle, Washington 98104
Tel: (206) 625-3000Voluntary
Financial
Home audit
RegionalPROGRAM DESCRIPTION:

Begun in April 1978, the HEC program is one of many methods employed by the City of Seattle to reduce its residential energy consumption 10% by 1990. The program provides residential conservation incentives through neighborhood workshops and free home energy audits.

At the workshops, attended by about 10 people each session, citizens are informed of the objectives of the City conservation program and shown practical techniques, such as reading utility bills and weatherstripping a door. Areas of energy loss in the host's home are indicated along with cost estimates and payback periods for various conservation measures. Thermographic pictures of houses in the neighborhood are also shown and interpreted. The free home energy audit is provided upon request to all customers of Seattle City Light, the city-owned utility. 15 trained auditors check approximately 15 homes each per week for insulation, hot water heaters, weatherstripping, caulking, etc., selling at cost many of the materials required for improvements. A computerized followup report is sent to the homeowner, outlining the audit results, costs and payback periods for suggested improvements. Under an insulation financing program loans are offered at a 10% discount (paid by the utility) and 6% interest with 3 years to pay. Low income customers may soon enjoy free weatherisation work under another proposed city program.

By December 1979 (after 18 months of operation) 98 home workshops and 6650 home audits had been completed. A 2-3 month audit backlog is now typical, leading to the possibility of increased staffing and/or computer sophistication (e.g., direct telephone-computer hookup for instant audit feedback from the home being inspected). The city aims to conduct 7500 audits annually for an indefinite period.

COSTS-BENEFITS:

Each audit costs the city \$50. Actions taken during and subsequent to the audit are each expected to achieve a 5% reduction in household energy consumption, for an annual system-load saving of 500 kilowatts (or \$130,000 p.a.). Annual operating costs of \$485,000 (salaries \$380,000, admin. \$96,500, materials \$8600) are financed through a Federal grant and City Light contributions. Gregson estimates the program's cost-benefit ratio to be 2:1 when its displacement of new generating equipment otherwise required is taken into account.

MAJOR RELATED LITERATURE REFERENCES:

1. Meier, Alan K., "Measuring Residential Energy Conservation", in R.A. Razzolare and C.B. Smith (eds.), Changing Energy Use Futures, Pergamon Press, New York, 1979.

PROGRAM NAME:

Home Conservation Requirement (HCR)

INDEX NUMBER:US-H-26
July, 1980ORGANIZATION:

City of Seattle

PROGRAM TYPE:CONTACT:Ms. Marta Metcalf
Program Coordinator
Seattle Energy Office
920 Arctic Building
Seattle, Washington 98104
Tel: (206) 625-3835Mandatory, proposed
Non-financial
Residential Retrofit
MunicipalPROGRAM DESCRIPTION:

The proposed HCR was developed by the Seattle City Energy Office at the instigation of the Mayor and City Council who believed it was time to review mandatory weatherization programs while still developing and operating voluntary programs (see Home Energy Check, US-H-25).

HCR's goal is to improve the energy efficiency of Seattle's existing housing stock by requiring all single and multiple-family dwellings to meet certain mandatory minimum weatherization standards within five years. Proposed standards, which are cost-effective in most homes, concentrate on insulation, attic ventilation, vapor barriers, water heater thermostat setback, and caulking and weatherstripping. Dwellings could be exempted from one or more portions of the requirement for specific structural and financial hardship reasons.

Under the recommended program, the conservation requirement would have an effective date of three years after the passage by the City Council. During those three years voluntary weatherization and certification of compliance would be encouraged through large-scale publicity campaigns. Those dwellings which had not been weatherized and certified during the voluntary period would be inspected during a two-year enforcement period. Non-compliance would invoke a notice of violation requiring compliance within 90 days, after which a second inspection would be made. Continued non-compliance would result in a civil penalty of \$3 per day per dwelling unit and charge for further inspections.

COSTS-BENEFITS:

Total estimated costs for the 5 year program are \$59.7 million (1980 dollars), comprising a \$4.3 million implementation and enforcement budget, and \$55.4 million in weatherization investment costs.

Annual electricity, gas and oil energy savings of over one trillion Btu's, or \$5.5 million (1979 dollars), discounted over the life of the weatherization investments indicate total program benefits of \$98.8 million.

MAJOR RELATED LITERATURE REFERENCES:

1. Home Conservation Requirements, Report and Program Proposal, Seattle Energy Office, December 1979.

PROGRAM NAME:

Thermography Flyover

INDEX NUMBER:

CAN-H-27

July, 1980

ORGANIZATION:

BC Hydro & BC Energy Commission

PROGRAM TYPE:CONTACT:

Dr. Tim Newton

Energy Conservation Division

BC Hydro

970 Burrard St.

Vancouver, B.C. V6Z 1Y3

Tel: (604) 663-3583

Voluntary

Non-financial

Home Audit

Regional

PROGRAM DESCRIPTION:

BC Hydro uses thermography to detect roofs with high rates of heat loss. Public displays are arranged in local shopping malls, and technicians show owners how to locate their own homes and help interpret the information conveyed by the images.

In addition, computer terminals, programmed by BC Energy Commission to analyze home insulation from owners' information, are set up at each display to calculate and printout suggestions for improvements, with estimates of \$ savings provided. An insulation demonstration 'house' (staffed by the Insulation Association) is often also used to show all forms of insulation, windows, etc. suitable for such improvements.

The thermography program, commenced in Spring 1978, will cover all major population centres of the province served by BC Hydro over a 3-year period. To date there has been more than 60% response by affected homeowners.

COSTS-BENEFITS:

No data available.

MAJOR RELATED LITERATURE REFERENCES:

1. Cihlar, J., "Use of Aerial Thermography in Canadian Energy Conservation Programs," International Symposium on Remote Sensing of the Environment, Vol. 11, Proceedings of the Environmental Research Institute of Michigan, (1977), Ann Arbor, Michigan, pp. 1157-1206.
2. "Applications of Thermography", Mechanical Engineering, March 1977, p. 61.

PROGRAM NAME:

Memphis Solar Water Heating Demonstration

INDEX NUMBER:US-H-41
July, 1980ORGANIZATION:

Tennessee Valley Authority

PROGRAM TYPE:CONTACT:Douglas D. Wilner
Tennessee Valley Authority
1470 Chestnut Street - Tower II
Chattanooga, Tennessee 37401
Tel: (615) 755-6851Voluntary
Financial
Solar Heating
RegionalPROGRAM DESCRIPTION:

The Memphis Solar project involves the design, installation, certification, and low-interest financing of solar water heaters which replace existing electric resistance water heating systems.

Upon request TVA provides a free home survey to determine the feasibility of solar water heating. If installation is undertaken TVA provides a 20 year, 3.35% loan for system and installation costs. No downpayment is required and the loan is repaid through the monthly electricity bill at \$13 per month.

The program is administered through the South Memphis Development Corporation, a non-profit community development corporation that provides solar information, purchases solar equipment and trains local contractors to install the systems under the TVA program. Six advisors conduct the solar surveys and post-installation inspections. The systems are installed by 5 small businesses.

By March 31, 1980 3200 program information requests had resulted in 590 contracts and 450 system installations.

COSTS-BENEFITS:

The final cost to the customer average \$2093 per installation, for annual water heating cost savings of approximately 65%. The project provides TVA with 4.19 million kWh savings per annum per 1000 systems installed.

MAJOR RELATED LITERATURE REFERENCES:

1. Tennessee Valley Authority Program Summary, Division of Energy Conservation and Rates, April 1980.
2. US Department of Housing and Urban development, "Selling the Solar Home: Some Preliminary Findings", Residential Solar Program Report #1, 1978.
3. Solar Heating and cooling Demonstration Program - Cycle 1, Government Printing Office, Washington, DC 20402.

PROGRAM NAME:

Solar Domestic Hot Water Demonstration

INDEX NUMBER:

CAN-H-42
July, 1980

ORGANIZATION:

Ministry of Energy, Mines and Resources, British
Columbia

PROGRAM TYPE:

Voluntary
Financial
Home Heating
Regional

CONTACT:

Dr. James M. Hill
Renewable Energy Coordinator
Conservation & Technology Division
Energy, Mines and Resources
2006 - 1177 West Hastings St.
Vancouver, B.C. V6E 2L7
Tel: (604) 689-1831

PROGRAM DESCRIPTION:

This program is one of several demonstration programs designed to determine what role solar energy can fulfill in the future energy supply requirements of British Columbia.

Program objectives are 1. to see how well solar energy systems perform under a wide variety of installation conditions, 2. to determine the willingness of the public to turn to solar energy and to reveal the problems they face if they do, 3. to determine what energy contributions can be expected from solar domestic hot water systems.

100 families located in four cities will receive solar domestic hot water heating systems at a cost of \$1500 (normal retail \$2500-3500) with the balance paid by the Government.

COSTS-BENEFITS:

The project is sponsored jointly by the Federal and B.C. Provincial governments, with a budget of \$313,000. This breaks down to administration and installation of the system \$365,000, monitoring \$78,000, promotion \$10,000, with \$150,000 recovered for homeowners.

Benefits not yet quantified.

MAJOR RELATED LITERATURE REFERENCES:

1. U.S. Department of Housing and Urban Development, "Selling the Solar HOME: SOME PRELIMINARY FINDINGS", RESIDENTIAL SOLAR PROGRAM REPORT #1, 1978.
2. SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM - CYCLE 1, GOVERNMENT PRINTING OFFICE, WASHINGTON, DC 20402.

PROGRAM NAME:

Passive Solar Home Project

INDEX NUMBER:US-H-43
July, 1980ORGANIZATION:

Tennessee Valley Authority

PROGRAM TYPE:Voluntary
Financial
Solar Heating
RegionalCONTACT:James T. Gallagher
Tennessee Valley Authority
1470 Chestnut Street - Tower II
Chattanooga, Tennessee 37401
Tel: (615) 755-6851PROGRAM DESCRIPTION:

This program involves designing, constructing and monitoring the energy performance of passive solar homes (i.e., homes constructed to take maximum advantage of the sun without using mechanical equipment for collecting or storing solar energy).

Eleven different house designs, ranging from 1000-2000 square feet and \$35,000-\$75,000, are being tested on 44 sites in Tennessee Valley. Customers who buy the homes receive a \$2500 incentive payment and in return allow TVA to install monitoring equipment and to use the houses for limited demonstration purposes.

Six non-profit community development organizations are sponsoring and coordinating construction with 9 builders. Construction is supervised by the Solar Applications and Architectural Design Branches of TVA.

At March 31, 1980, eight houses were completed.

COSTS-BENEFITS:

Total program costs of \$2.7 million will be financed by TVA. Loan repayments will recover \$1.98 million for a net cost of \$720,000.

MAJOR RELATED LITERATURE REFERENCES:

1. Tennessee Valley Authority Program Summary, Division of Energy Conservation and Rates, April 1980.
2. Yellot, John L., "Passive Solar Heating and Cooling Systems," ASHRAE Journal, vol. 20 #1, Jan. 1978, pp. 60-67.
3. Mazria, Edward, The Passive Solar Energy Book, Rodale Press, Emmaus, PA, 1979.

PROGRAM DESCRIPTION:

Heat Pump Financing Program (HPFP)

ORGANIZATION:

Tennessee Valley Authority

CONTACT:

R. Lee Culpepper
Tennessee Valley Authority.
Power Service Center - 4
Chattanooga, Tennessee 37401
Tel: (615) 755-3901

INDEX NUMBER:

US-H-61
July, 1980

PROGRAM TYPE:

Voluntary
Financial
Retrofit Financing
Regional

PROGRAM DESCRIPTION:

TVA developed HPFP as an adjunct to its Home Insulation Program (US-H-21) to help residential consumers save on energy costs and to encourage the adoption of more energy efficient heating systems. The financing provision, operated through 107 of TVA's 160 power distributors, provides qualifying consumers with low-interest loans for the purchase and installation of heat pump units.

To participate in this program, owners of single family detached dwellings or duplexes first obtain a free home energy survey offered by TVA and the distributor. If a heat pump loan is to be made, the consumer is required to carry out the cost-effective weatherization measures recommended in the survey. One of 53 trained heat pump advisors will help the consumer calculate the desirability of a heat pump system and provide a list of TVA-approved heat pump dealers who have agreed to install the system according to TVA specifications.

Customers may borrow at low interest rates (TVA's average borrowing cost) for buying and installing the electric heat pump, with repayments made in equal payments on their electricity bills for a period up to 10 years. Loans average \$2000 - \$4000 per installation depending on the size of the unit, the cost of duct work needed, and labor costs. The advisor inspects the installation work and authorizes contractor payment.

As of March 31, 1980, 1700 loans had been made following 4900 heat pump inspections. 6.66 kwh will be saved annually by consumers who have received loans.

COSTS-BENEFITS:

TVA estimates that a consumer can save 4000-7000 kwh during a single heating season with an electric heat pump. This represents \$130-\$230 p.a. on electric heat bills. TVA expects to make 40,000 loans over the next 8 years at a total cost of \$5-9 million and producing savings of \$12 million for TVA through reduced energy supply cost.

MAJOR RELATED LITERATURE REFERENCES:

1. Tennessee Valley Authority Program Summary, Division of Energy Conservation & Rates, April 1980.
2. Derven, Ronalds, "Heat Pumps: Cheapest Cooling and Heating For Your Home?", Popular Science Monthly, Vol. 109, Sept. 1976, pp. 92-95.

PROGRAM NAME:

Insulation Financing Program

INDEX NUMBER:CAN-H-62
July, 1980ORGANIZATION:

BC Hydro

PROGRAM TYPE:Voluntary
Financial Incentives
Residential Insulation
RegionalCONTACT:Dr. Tim Newton
Energy Conservation Division
BC Hydro
970 Burrard Street
Vancouver, BC V6Z 1Y3
Tel: (604) 663-3583PROGRAM DESCRIPTION:

BC Hydro encourages the installation of good insulation by offering to finance up to \$500 of the cost, on approved credit, at the rate of 10% p.a. on the declining balance (with CCA).

BC Hydro may also finance, for a period of up to 2 years, the installation of insulation in walls, ceilings and floors, and thermal or storm windows, in existing homes. (since April 1, 1977)

COSTS-BENEFITS:

In the first 13 months of the plan, BC Hydro financed \$519,000 for 1344 homeowners.

MAJOR RELATED LITERATURE REFERENCES:

1. "Retrofitting Existing Homes for Energy Conservation: An Economic Analysis", For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.
2. Darley, John M., "Energy Conservation Techniques as Innovations, and their Diffusion." Energy Builder, Vol. 1, #3, April 1978, pp. 339-343.

PROGRAM NAME:

Home Insulation Loan Program

INDEX NUMBER:

US-H-63

July, 1980

ORGANIZATION:

City of Wichita

PROGRAM TYPE:CONTACT:

James E. Myers
The City of Wichita
City Hall
455 North Main St.
Wichita, Kansas 67202
Tel: (316) 268-4105

Voluntary
Financial
Space Heating
Regional

PROGRAM DESCRIPTION:

A testing program of 10 typical Wichita houses during the winter heating season of 1974/75 showed attic insulation upgrading to be the most effective way of reducing heating costs. Accordingly in January 1976 a zero-interest attic insulation loan program was established with an initial Community Development Grant of \$135,000. A public awareness campaign using pamphlets, on insulation benefits and loan details, and aerial thermography was mounted to encourage residents to insulate.

All city homeowners are eligible for the loan, which requires a 10% downpayment and, depending on family income and size, takes between 6 and 60 months to repay.

Participating contractors, who must agree to meet Federal insulation material and installation standards, complete contract bid sheets and loan applications on behalf of homeowners, using city-provided costing tables. Inspections of contractor work are made either randomly or at the customer's request, to ensure compliance with the standards. Any complaints can be turned over to Federal agencies.

By September 1978, 21 months after commencement of the program, 3500 loans had been made with a further 1800 home insulations not using the loan taking place as a result of the public awareness campaign. Two-thirds of the city's insulation contractors participate in the program, and the loan repayment default rate is approximately 2%.

Recent plans to expand the program to rental units, homes of the elderly and residential units outside the city have been shelved until funding permits.

COSTS-BENEFITS:

Total funding to September 1978 was \$485,000.

Quantified benefits not available.

MAJOR RELATED LITERATURE REFERENCES:

1. Darley, John M., "Energy Conservation Techniques as Innovations, and their Diffusion." Energy Builder, Vol. 1, #3, April 1978, pp. 339-343.

PROGRAM NAME:

California 55% Solar Tax Credit

INDEX NUMBER:

US-H-64

July, 1980

ORGANIZATION:

California Energy Commission

PROGRAM TYPE:CONTACT:

Ms. Dianna Rains

Solar Office

California Energy Commission

1111 Howe Ave.

Sacramento, California 95825

Tel: (916) 920-7727

Voluntary

Financial Incentive

Solar Heating

Regional

PROGRAM DESCRIPTION:

California has a comprehensive set of programs designed to achieve 1.5 million solar installations by 1985, representing 20% of commercial and residential buildings.

The California 55% Solar Tax Credit was enacted October 1977 and made retroactive to January 1977. It will expire 31 December 1980 unless extended by law. The credit of 55%, to a maximum of \$3000, applies to water heating (domestic water heating, swimming pool heating, or pool covers), space conditioning, solar electricity generation systems, wind energy systems, and solar industrial applications.

Unlike the Federal Solar Tax Credit (30% on the first \$2000, 20% thereafter, to a maximum of \$10,000) which is deductible from the California Credit, and which is due to expire 1984, the California credit is allowed to the person owning the property at the time the system is installed. The tax credit in excess of state taxes due may be carried over into subsequent tax years.

Credit may also be claimed on conservation measures taken to enhance the effectiveness of the solar system, including weather stripping, insulation, and water from restrictors.

COSTS-BENEFITS:

In 1977 13,000 taxpayers claimed credits totalling \$10.5 million, plus an additional \$2.7 million to be paid as carryover. 99.7% of the credits were claimed by individuals (average claim = \$1472, median income = \$30,581, compared with average family income = \$16,000. 72% of claims were for swimming pools, 15% for domestic water heating systems. 7% included conservation measures. No estimate of benefits is available.

MAJOR RELATED LITERATURE REFERENCES:

1. Nemetz, Peter N., Henkey, Marilyn and Zethof, Bert, "Residential Energy Conservation, A California Case study", Report to Consumer and Corporate Affairs, Canada, 1980.
2. Cunningham, William H., and Joseph Brandel, "Energy Conservation, Price Increases and Payback Periods." In H. Keith Hunt (ed.) Advances in Consumer Research, vol. V, Proceedings of the Eighth Annual Conference of the Association for Consumer Research, Ann Arbor, Michigan, 1978.

PROGRAM NAME:

Wisconsin Alternate Energy Tax Credit

INDEX NUMBER:

LS-H-65

ORGANIZATION:

Dept. of Industry, Labor and Human Relations

July, 1980

CONTACT:

John Neville
 Program Manager
 Dept. of Industry, Labor & Human Relations
 Safety & Building Division -- GEF
 Madison, Wisconsin 53702
 Tel: (608) 266-1149

PROGRAM TYPE:

Voluntary
 Financial
 Solar Heating
 Regional

PROGRAM DESCRIPTION:

Enacted May 3, 1978, the Wisconsin Tax Credit applies to individuals or corporations that install (or modify) qualifying solar, wind or waste conversion energy systems.

The credit varies according to the year of installation (e.g. 1977/78 30%, 1983/4 12%) and covers design, construction, installation and equipment system expenses in the range of \$500-\$10,000 for individuals.

The taxpayer is required to prove that the system is cost-effective over a 25-year period to qualify for the credit. A formula to help calculate cost-effectiveness is provided in a separate schedule the taxpayer attaches to his state income tax.

In the program's first year of operation 178 applications were approved. Average system cost was \$5000 and the average income tax benefit was \$1225. 97% of applications were for solar systems, 2% for wind energy systems and 1% for waste energy conversion systems.

COSTS-BENEFITS:

Preliminary analysis indicates the credit could save 38,000 MBTU (5150 gallons of oil) per annum or nearly \$3 million over the 25-year life of the installed systems. In 1978/79 the state distributed \$244,046 in tax benefits for a return of \$103,000 (in one year) in fuel savings.

MAJOR RELATED LITERATURE REFERENCES:

1. Nemetz, Peter N., Hankey, Marilyn and Zethof, Bert, "Energy Conservation Incentives: A Wisconsin Case Study", Report to Consumer and Corporate Affairs, Canada, 1980.

PROGRAM NAME:

Air-Conditioning Cycling Program

INDEX NUMBER:US-H-81
July, 1980ORGANIZATION:

Tennessee Valley Authority

PROGRAM TYPE:CONTACT:Harold G. Womble
Tennessee Valley Authority
210 Power Building
Chattanooga, Tennessee 37401
Tel: (615) 755-6773Voluntary
Financial Incentive
Load Management
RegionalPROGRAM DESCRIPTION:

TVA will install remote control switches on existing central air-conditioners or heat pumps of 50,000 volunteer consumers. The participants will receive a \$5 per month credit on their electric bills and, in return, will allow TVA to cycle the normal operation of their air-conditioning systems. The program will allow TVA to make more efficient use of generating equipment and reduce the need to operate expensive oil-fired generators.

When the demand for TVA power systems reaches a predetermined level the compressors, but not the fans, of central air conditioners of participating customers will be turned off by remote control for a period of 7 1/2 minutes per half hour. Because the off-cycle is short, customers should experience little inconvenience.

Participation is for one air-conditioning season, automatically renewable for one-year periods unless either party decides to cancel. TVA expects to have the 50,000 volunteer participants by 1983 and to eventually expand the program to include 350,000 volunteers.

COSTS-BENEFITS:

TVA will bear all costs of the program, including buying, installing, maintaining and inspecting the remote-control equipment. Participants will receive a monthly credit on their electric bills during the months of June to September. TVA estimates the program cost at \$7.7 million, with each installation expected to reduce TVA's summer peak demand by 1.4 kilowatts, resulting in a total reduction of 68 megawatts at system peak.

MAJOR RELATED LITERATURE REFERENCES:

1. Grome, Mary Lynn, "California Residential Load Cycling Attitude Survey", In R.A. Fazzolare & C.B. Smith (eds.), Changing Energy Use Futures, Pergamon Press, New York, (1979), Vol 2., pp. 874-883.
2. Herman, Pat & Dewey Seeto, "Some Empirical Evidence on Customer Attitudes and Behavior Towards Volunteer Direct Electrical Load Control Programs: A Policy Perspective on Residential and Commercial Customers", Paper to be presented at the International Conference on Consumer Behaviour and Energy Use, Banff, Alberta, September 1980.
3. Corney, William J., Yantis, Betty & John E. Nixon, "Consumer Acceptance of Centralized Control of Electrical Energy Usage", Paper to be presented at the International Conference on Consumer Behaviour and Energy Use, Banff, Alberta, September 1980.

PROGRAM NAME:

Manpower Training

INDEX NUMBER:

US-H-91

July, 1980

ORGANIZATION:

Tennessee Valley Authority

PROGRAM TYPE:CONTACT:

Mr. Eddie L. Tramel
Conservation & Energy Management Branch
Tennessee Valley Authority
Power Service Centre - 5
Chattanooga, Tennessee 37401
Tel: (615) 755-3651

Voluntary
Non-financial
Home Weatherization
Regional

PROGRAM DESCRIPTION:

TVA in cooperation with the Tennessee Community Services Administration (CSA) and the Tennessee Community Action Agencies is conducting an 18-month pilot demonstration program to persons employed under the Comprehensive Employment Training Act (CETA) in home weatherization. The more than 500 CETA trainees will weatherize about 8000 low-income family dwellings during the training program.

TVA is supporting & coordinating all training activities. These include providing an intensive orientation course for field training supervisors, conducting periodic classroom seminars for CETA workers, and reviewing and evaluating trainee progress.

In each of the electrically heated homes weatherized by CETA trainees it is estimated that more than 6000 kWh will be saved. Further, the weatherization of each dwelling will reduce the winter system demand by about 2 kw.

COSTS-BENEFITS:

The estimated cost of the project is \$895,000 of which \$535,000 will be financed by power funds.

MAJOR RELATED LITERATURE REFERENCES:

1. Tennessee Valley Authority Program Summary, Division of Energy Conservation, Rates, April 1980.

PROGRAM NAME:

Residential Energy Conservation Schedule

INDEX NUMBER:

US-H-101

July, 1980

ORGANIZATION:

Cleveland Electric Illuminating Co.

PROGRAM TYPE:CONTACT:

Robert H. Love

Residential Energy Application Dept.

Cleveland Electric Illuminating Co.

P.O. Box 5000

Cleveland, Ohio 44101

Tel: (216) 622-9800

Voluntary

Financial

Home Heating

Regional

PROGRAM DESCRIPTION:

The Energy Conservation Rate is an ongoing schedule approved by the Public Utilities Commission of Ohio in November 1976. The objective of the rate is to provide an inducement to the construction industry and home-buying public to provide improved thermal efficiency in residential dwelling units.

The rate is applicable to both new and existing houses, regardless of the type of energy used for space heating. The rate recognizes that consumers incur greater costs in providing the improved insulation/construction standards required and, therefore, provides lower cost electric service.

To qualify the homeowner must provide CEI with builder-certified details of thermal installation and other energy conservation measures, and request the lower billing rate.

The rate has been effective in upgrading general insulation standards in the new construction industry in Ohio, with many municipalities using the rate standards as a guide in developing their building codes.

COSTS-BENEFITS:

Unknown.

MAJOR RELATED LITERATURE REFERENCES:

PROGRAM NAME:

EnergyMark

INDEX NUMBER:

US-H-111

July, 1980

ORGANIZATION:

Home Builders Association of Greater St. Louis

PROGRAM TYPE:CONTACT:

John J. Kirsch

Home Builders Association

10104 Old Olive Street Road

St. Louis, Missouri 63141

Tel: (314) 994-7700

Voluntary

Non-financial

Building Standards

Regional

PROGRAM DESCRIPTION:

Began January 1980, the EnergyMark program is an attempt by a home builders association to get builders to utilize voluntarily, comprehensive energy conserving materials and construction methods in the St. Louis area.

EnergyMark sets minimum energy conservation standards in 23 distinct areas of new home construction, keying in on 5 main areas: insulation, windows and doors, weather sealants, heating and cooling equipment, water flow and heating. To register (annually) in the program a builder must comply with these standards and in return is allowed to display a distinctive EnergyMark decal on windows of finished houses.

Builders using additional energy saving devices may qualify to display an additional 1, 2, or 3 "E"'s on the decal, thereby indicating to the buying public the higher level of energy efficiency of that home. Brochures explaining the need for residential energy conservation, the aims and details of the EnergyMark program are widely distributed throughout St. Louis to foster public awareness and demand.

By June 1980 over 70 building companies, representing 75% of new home construction in the St. Louis area, had registered in the program. 44% of these builders qualified for the 1-E, 2-E or 3-E designation. St. Louis City has subsequently adopted the EnergyMark standards as the basis for its new residential building energy code.

COSTS-BENEFITS:

Unknown.

MAJOR RELATED LITERATURE REFERENCES:

1. Quelch, John A., and Peter Thirkell, "Builders as Consumers: Their Role in Residential Sector Energy Conservation." In R. A. Fazzalone and C. B. Smith (eds.), Changing Energy Use Futures, Pergamon Press, New York, 1979.
2. Lees, Al, "Home Insulation: Do Those Wild New Standards Make Sense", Popular Science Monthly, vol. 169, Sept. 1976, pp. 130-135.
3. An Assessment of Thermal Insulation Materials and Systems for Building Applications, Government Publication, EI. 28: BNL-50862, SN 061-000-00094-1, 1978.

PROGRAM NAME:
ENERGUIDE

ORGANIZATION:

Consumer & Corporate Affairs Canada

CONTACT:

Roy Bushfield
Chief of Energy Programs
Consumer & Corporate Affairs Canada
68 Victoria St., Ottawa/Hull K1A 0C9
Tel: (613) 997-4774

INDEX NUMBER:

CAN-A-01
July, 1980

PROGRAM TYPE:

Mandatory
Non-financial
Appliance Information
National

PROGRAM DESCRIPTION:

Legislated through the Consumer Packaging & Labelling Act, the ENERGUIDE program requires an energy consumption label to be prominently displayed on all major appliances manufactured after the following dates: refrigerators (Sept. 30, 1978), freezers (Nov. 30, 1979), dishwashers (June 30, 1980), clothes washers/dryers (Sept. 30, 1980), ranges (Dec. 31, 1980).

The Energuide label, attached at point of manufacture, states the kilowatt hours per month energy consumption of each model as verified by the Canadian Standards Association (CSA). CSA also periodically publishes an appliance efficiency directory, comparing energy consumption of all available brands, which is made available to the public through retail displays, utilities, the Consumers' Association of Canada & CCA offices.

COSTS-BENEFITS:

In the first 16 months of refrigerator labelling, almost one-third of all models were made over 20% more efficient, primarily through improved insulation.

Bushfield estimates that the program will produce net savings for each refrigerator purchaser of \$240 (over a 10 year period), while net national savings from freezer labelling have been estimated at \$37 million (over the 15-year life of the freezer @ \$.04 per kWh).

MAJOR RELATED LITERATURE REFERENCES:

1. Claxton, John D., & C. Dennis Anderson, "Energy Information at Point-of-Sale: A Field Experiment", in Jerry C. Olson (ed.) Advances in Consumer Research, vol. VII, Proceedings of the 10th Annual Conference of the Association for Consumer Research, (1979), Ann Arbor, Michigan.
2. Hutton, R. Bruce & Dennis McNeill, "Research Issues, Empirical Findings and Public Policy Implications for Energy Labelling", in Jerry C. Olson, (ed.) Advances in Consumer Research, vol. VII, Proceedings of the 10th Annual Conference of the Association for Consumer Research, (1979), Ann Arbor, Michigan.
3. McNeill, Dennis L. & William L. Wilkie, "Public Policy and Consumer Information: Impact of the New Energy Labels", JCR, Vol. 6, June 1979, pp. 1-11.

PROGRAM NAME:

Project Pool It.

ORGANIZATION:

Valley Forward Association

CONTACT:

Dick Toolan
 Project Manager, Project Pool It
 70 East Mitchell Drive
 Phoenix, Arizona 85012
 Tel: (602) 248-7283

INDEX NUMBER:

US-T-01
 July, 1980

PROGRAM TYPE:

Voluntary
 Non-financial
 Transportation
 Regional

PROGRAM DESCRIPTION:

Project Pool It, a consolidated rideshare effort, was organized in June 1974 as a result of OPEC oil shortages of 1973-74. The project's main objective is energy conservation, with air pollution and traffic congestion reduction being secondary objectives.

The project covers over 2000 square miles in Maricopa County and uses computer programs to process carpool/vanpool applications on a weekly basis. Potential carpoolers are provided with a list of other interested/active parties, and information on transit schedules. The project also helps interested companies to conduct vanpool feasibility studies and encourages employers to consider work scheduling that would be conducive to group transportation. Incentive/disincentive programs and parking management strategies are also pursued.

Marketing activities are extensive and have included TV and radio advertising, posters, shopping centre displays, free theatre tickets, prize draws, and a 'quarter car' campaign.

COSTS-BENEFITS:

Funding is supplied through a grant from the Federal Highway Administration, under the 1974 Highway Conservation Act, and local media contributions of services in lieu of local jurisdictional funds.

A 1979 Phoenix Urban Area Vehicle Occupancy study indicated positive project results but provided no quantitative cost/benefit data.

MAJOR RELATED LITERATURE REFERENCES:

National Technical Information Service (NTIS), 5285 Port Royal Rd. Springfield, Virginia 22151, provides details on major US car/vanpools. See, for example:

1. Adams, Gerald H. Car Pools (A Bibliography with Abstracts), 1976
2. Ford, Richard H. "Vanpools for Urban Transportation: Their Legislative Base, Promotion and Potential", 1977.
3. Transportation Systems Center, Comparison of Organizational and Operational Aspects of Four Vanpool Demonstration Projects, 1979.

PROGRAM NAME:

Commuter Computer

INDEX NUMBER:

US-T-02

July, 1980

ORGANIZATION:

City of San Diego

PROGRAM TYPE:CONTACT:

M. M. Demetre

Program Director, Commuter Computer

P. O. Box 82358

San Diego, California 92138

Tel: (714) 237-FOOL

Voluntary

Non-financial

Transportation

Regional

PROGRAM DESCRIPTION:

A cooperative effort of the city of San Diego, the County of San Diego, the Comprehensive Planning Organization and CALTRANS, Commuter Computer has been active since July 1, 1975. The regional ridesharing program provides two main services:

1. Dial-in service: provides a convenient & prompt means for individuals to locate carpooling partners. When the potential carpooler phones 237-FOOL a receptionist completes a questionnaire over the phone. A computerized match list is mailed to the person within two working days. Individuals who need immediate assistance are contacted by phone the same day.
2. Organizational Services: Commuter computer field reps contact and work within top management to develop ridesharing programs at the employment site. Over 500 major county employers utilize these services and account for 88% of all ridesharing applications received.

In 1979 over 50,000 San Diego commuters received matching assistance through Commuter Computer. Special ridesharing programs are run for schools, sports fans, churches and skiers.

COSTS-BENEFITS:

Since 1975 CC services have conserved over 4 1/2 million gallons of fuel, saved more than \$8.5 million, eliminated 8,900 trips per day, reduced air pollution by over 3,000 tons. Every tax dollar spent on CC saves users \$12.

MAJOR RELATED LITERATURE REFERENCES:

National Technical Information Service (NTIS), 5285 Port Royal Rd., Springfield, Virginia 22151, provides details on major US car/vanpools. See, for example:

1. Transportation Systems Center, Comparison of Organizational & Operational Aspects of Four Vanpool Demonstration Projects, 1979.
2. Semi-annual evaluation reports available from above address.

PROGRAM NAME:

Reduced Speed Limits

ORGANIZATION:

Government

CONTACT:

Robert J. Genereux
 President, CAA
 150 Gloucester St.
 Ottawa, Ontario K2P 0A6
 Tel: (613) 237-2105

INDEX NUMBER:

INT-T-21
 July, 1980

PROGRAM TYPE:

Mandatory
 Non-financial
 Private Automobile
 National

PROGRAM DESCRIPTION:

Many nations introduced lower automobile speed limits as a result of the 1973-4 oil shortages. Some have maintained those limits (New Zealand, Netherlands), while others continue to reduce them (Poland, Japan).

A selected sample of August 1979 speed limits, in km/h, is presented below:

	<u>Highways</u>	<u>Open Roads</u>	<u>Built-up Areas</u>
France	130	110	60
Yugoslavia	120	100	60
Netherlands	100	80	50
South Africa	90	90	60
Turkey	90	90	50
U.S.A.	90	90	40
Brazil	80	80	80
Canada/NZ	80	80	50
Philippines	80	70	30
Japan	80	60	40

MAJOR RELATED LITERATURE REFERENCES:

1. AIT Information Special, February, 1980. pp. 4-6.

PROGRAM NAME:

Operation Tune-Up

INDEX NUMBER:CAN-T-31
July, 1980ORGANIZATION:

Energy, Mines & Resources

PROGRAM TYPE:CONTACT:

Walter Reepie
Coordinator, Consumer Conservation
Department of Energy, Mines & Petroleum Resources
2006 - 1177 West Hastings
Vancouver, B.C. V6E 2L7
Tel: (604) 689-1831

Voluntary
Non-financial
Private Automobile
Regional

PROGRAM DESCRIPTION:

In February 1980 the BCMA teamed up with the federal and provincial energy ministries for an experimental illustration of the potential energy and dollar savings which can be realized through proper car driving and maintenance habits.

The project was designed to compare fuel economies of various cars before and after tune-ups and driver education seminars. Vancouver celebrities participated in the program for a 3-week period and achieved fuel economy improvements ranging from 7% to 34%, with an average increase of over 15%.

Similar projects in Ottawa, Quebec and Toronto, also sponsored by EMR and coordinated by the local AA, returned similar results.

COSTS-BENEFITS:

The projects, sponsored by EMR, each cost less than \$5000. Extrapolation of the average Vancouver results indicated potential annual gas savings of 92 million gallons in B.C., and 847 million gallons in Canada.

MAJOR RELATED LITERATURE REFERENCES:

1. The Car Mileage Book: How to Buy, Drive and Maintain Your Car to Save Money and Energy, Office of Energy Conservation, Energy Mines & Resources, June 1977.
2. Russo, J.E. "A Proposal to Increase Energy Conservation Through Provision of Consumption and Cost Information to Consumers", American Marketing Association Proceedings, 1977, pp. 437-442.

PROGRAM NAME:

Car-less Days

INDEX NUMBER:

INT-T-41

July, 1980

ORGANIZATION:

Government

PROGRAM TYPE:CONTACT:

Robert J. Genereux
 President, CAA
 150 Gloucester St.
 Ottawa, Ontario K2P 6A6
 Tel: (613) 237-2105

Mandatory
 Non-financial
 Private Automobile
 National

PROGRAM DESCRIPTION:

Cyprus, Yugoslavia, Romania, Greece & New Zealand have all introduced mandatory car-less day systems. All use an odd/even license plate number system, except New Zealand which uses windshield stickers to indicate the car-less day.

e.g.

- * Cyprus, Greece & Romania practice alternate weekend restrictions (5pm Saturday - 5am Monday in Cyprus)
- * Yugoslavia - odd numbered vehicles cannot be driven on Tuesdays & first weekend of the month; even numbered vehicles on Thursdays & the third weekend.
- * New Zealand - motorists cannot use their vehicles from 2am through 12 midnight on their chosen car-less day.

The US Federal Standby Emergency Energy Conservation Plan allows for a sticker-based car-less day(s) system in the event of an acute energy shortage.

MAJOR RELATED LITERATURE REFERENCES:

1. AIT Information Special, February, 1980

PROGRAM NAME:

Restrictions on Gasoline Retail Sale Hours

INDEX NUMBER:

INT-T-51

July, 1980

ORGANIZATION:

Government

PROGRAM TYPE:

Mandatory

Non-Financial

Private Transportation

National

CONTACT:

Robert J. Genereux

President, CAA

150 Gloucester St.

Ottawa, Ontario K2P 0A6

Tel: (613) 237-2105

PROGRAM DESCRIPTION:

A number of countries (e.g., Cyprus, Turkey, New Zealand, Japan, Brazil, & South Africa) currently practise a relatively uniform system of gasoline retail sales restrictions. Typically, supplies are restricted to daylight hours during the work week, with exceptions made for special professions (medical, police), essential government services, diplomats & tourists. E.g.,

1. In New Zealand gasoline is sold from 6 am to 7 pm Monday through Friday only - stations are closed from 7 pm Friday to 6 pm Monday.
2. In Japan gasoline retail hours are generally from 8 am to 8 pm. However, the government recommends that gasoline not be sold on Sundays & holidays.

During the gas crisis of summer 1975, 14 US states instigated a daily rationing system based on the odd/even license plate numbers. As of September 1979 all states had withdrawn the compulsory rationing, although the system was still maintained in some areas of California.

A March 1980 AAA Monthly Fuel Gauge Report reported that 54% of US stations were open all day Saturday, 48% open Sunday, 40% open after 8 pm on weekdays, 6% open on a 24 hour basis.

COSTS-BENEFITS:

Unknown

MAJOR RELATED LITERATURE REFERENCES:

1. AIT Information Special, February 1980.
2. AAA Monthly Fuel Gauge Surveys.

PROGRAM NAME:

Canada's Emergency Gasoline Rationing Plan.

ORGANIZATION:

Federal Government

CONTACT:

Robert J. Genereux
 President, CAA
 150 Gloucester St.
 Ottawa, Ontario K2P 0A6
 Tel: (613) 237-2105

INDEX NUMBER:

CAN-T-61
 July, 1980

PROGRAM TYPE:

Emergency legislation
 Financial & non-financial
 Transportation
 National

PROGRAM DESCRIPTION:

Under the Energy Supplies Allocation Act gas rationing would be invoked only after the crude oil and the petroleum products allocation plans had failed to prevent serious supply shortages (in the order of 20%).

Gasoline would be distributed to industry & services on a descending priority basis: 1. critical (involving health, welfare and security) 2. essential (concerning national economic stability) 3. non-essential (involving the maintenance of living standards).

Top motor fuel priority would go to public transportation (school buses, trains, urban transit, etc.) with private transportation (cars, taxis, etc.) lowest priorities.

Rationing would involve government-issued coupons, valid for a limited period, and price controls to ensure fair market prices.

As at August 1979, only Japan (5%), Zimbabwe, Rhodesia, and Poland (company vehicle fleets) imposed motor vehicle rationing. Many other countries are making plans similar to Canada's in the event of severe fuel shortages (e.g., New Zealand, Netherlands, Switzerland, US).

MAJOR RELATED LITERATURE REFERENCES:

1. AIT Information Special, Feb. 1980, pp. 7-8.

PROGRAM NAME:

US Federal Standby Emergency Energy Conservation
Plan

INDEX NUMBER:

US-C-01
July, 1980

ORGANIZATION:

Department of Energy

PROGRAM TYPE:

Mandatory
Non-financial/Financial
Comprehensive
National

CONTACT:

Henry Bartholemew
Acting Director
Office of Emergency Programs
Conservation & Solar Energy, D.O.E.
1000 Independence Ave., S.W., Rm GE004A
Washington, D.C. 20580
Tel: (202) 252-4966

PROGRAM DESCRIPTION:

Announced Feb. 7, 1980 under the Emergency Energy Conservation Act (1979) which places first responsibility for dealing with an energy shortage on the individual states, but also requires the federal plan to be used as a model and backup measure for state plans.

The Federal Standby Plan consists of 8 rules; 5 interim final rules that can be implemented immediately and 3 proposed rules that must go through the rule-making procedures. Interim final rules include:

1. Multimedia public motor fuel conservation campaign
2. Minimum auto fuel purchases (\$7 for 8 cylinder cars, \$5 for smaller)
3. Purchases restricted to alternate days (based on license plate)
4. Reduced speed limit (by 5 mph) and stricter enforcement
5. Thermostat restrictions (heating 65; cooking 75-80; hot water 105)

Proposed measures include:

1. Employers' commitment to mass transit & variable work hours
2. Compressed workweek (to 4 days, with exceptions for key industries)
3. Car-less days (for 1-3 days/week, enforced through sticker inspection and fines).

The Plan can be implemented in a state if the state is failing to meet its mandated energy conservation target and is likely to face shortages of at least 8% of the projected normal state demand.

MAJOR RELATED LITERATURE REFERENCES:

1. Federal Register, Vol. 45, No. 27, pp. 8462-8504, (Feb. 7, 1980).
2. AAA Issues, April 1980, pp. 4-6.

PROGRAM NAME:

Eneraction

INDEX NUMBER:

CAN-C-11

July, 1980

ORGANIZATION:

Office of Energy Conservation, EMR

PROGRAM TYPE:CONTACT:

Mr. Doug Miller
 Head, Community Liaison Team
 Office of Energy Conservation
 Energy, Mines & Resources
 580 Booth Street
 Ottawa, Ontario K1A 0E4
 Tel: (613) 995-1801

Voluntary
 Non-financial
 Community Education
 National

PROGRAM DESCRIPTION:

Beginning January 1978 Eneraction was a nine month job creation program sponsored by the Office of Energy Conservation, EMR. 2000 teachers, engineers, artists, carpenters, business people, community animators were hired to promote energy conservation at the community level. Working in groups of 10 or less, their role was to build a greater awareness of the need to conserve and to create new opportunities for reducing energy consumption. A network of 152 of these Community Conservation Centres spanned four provinces (BC, Ontario, Quebec & New Brunswick).

To minimize any disruption of ongoing activities in the community and to ensure a basis for continuity, the centres were asked to work with existing groups and organizations wherever possible. The mandate allowed centres to undertake those projects most applicable to community need. These typically took the form of school education programs, community conservation displays, films and addresses to interested organizations, workshops, home energy audits and distribution of energy conservation literature.

COSTS-BENEFITS:

Funded by Energy, Mines & Resources.

MAJOR RELATED LITERATURE REFERENCES:

1. "People in Eneraction -- A Report on the Role of Citizens' Organizations in the Implementation of Energy Conservation", EMR, April, 1978.
2. "The Eneraction Chronicles", EMR, September, 1978.

PROGRAM NAME:

Total Community Conservation Project

INDEX NUMBER:

CAN-C-12
July, 1980

ORGANIZATION:

3 Federal departments, 3 local communities

PROGRAM TYPE:CONTACT:

Garth McGuire
Coordinator, NRG Action
3700 - 33rd Street
Vernon, B.C. V1T 5T6
Tel: (604) 542-1036

Voluntary
Non-financial
Community
National experiment

PROGRAM DESCRIPTION:

This national experimental project is designed to demonstrate the process, problems and impact of total community participation in energy conservation.

The objective is for each of the three communities (Vernon, B.C., Richmond Hill, Ontario, Fredericton, N.B.) to evolve its own energy conservation goals, strategies and action plans, through a citizen participation process involving all sections and levels of the community.

Commencing September 1979, the project operates in 5 stages over a 10 month period in each community: animation, awareness, collaboration, integration, consensus. This process is supported by continuous awareness programs from media coverage (newspaper energy columns, TV energy series) student projects, progress reports to the public, etc. Each community has an information resource centre for distribution of conservation literature, film viewing, student project research reference, meetings, etc.

Evaluations will take three forms: 1. a follow-up telephone interview to determine shifts in knowledge, attitude and behavior (measured against a September 1979 survey), 2. comparison of natural energy use in demonstration and comparison communities, 3. case studies, from personal interviews, to determine community satisfaction with the program.

COSTS-BENEFITS:

The project is sponsored by three of Canada's federal departments: Consumer and Corporate Affairs, Energy, Mines and Resources, and Supply and Services. Project budget is unknown, still too early for evaluation.

MAJOR RELATED LITERATURE REFERENCES:

1. D'Amore, Louis J., "Energy Conservation: A Total Community Approach Through Public Participation", Urban Forum, 4:6, pp. 12-20.

PROGRAM NAME:

Portland Energy Conservation Project

INDEX NUMBER:US-C-21
July, 1980ORGANIZATION:

City of Portland, Oregon

CONTACT:Cowles Mallory
Administrator
Office of Planning & Development
1220 SW 5th Avenue
Portland, Oregon 97204
Tel: (503) 248-4579PROGRAM TYPE:Voluntary/Mandatory
Financial/Non-financial
Municipal Planning
RegionalPROGRAM DESCRIPTION:

Portland City assumed energy conservation leadership shortly after the 1973-4 oil embargo. The comprehensive program included the following actions: 1) the Portland Energy Conservation Project studied current & projected energy consumption and recommended actions to reduce future energy needs, under a contract with HUD. 2) A City Energy Management Task Force examined city operations & identified projects & procedures which would conserve energy 3) energy audits of 128 city buildings to identify energy wastage 4) City Council allocated funds for capital improvements to reduce energy consumption by City govt. 5) The Energy Policy Steering Committee was appointed by City Council & charged with recommending actions to stimulate conservation in the private sector.

Proposed residential & transport activities include demonstration houses, an information center, low interest loans, tax credits, retrofit house resale standards, state-mandated weatherization programs, car/van pooling, bicycle & pedestrian traffic improvements, \$.01/gallon gas tax to finance traffic improvements.

COSTS-BENEFITS:

The weatherization program is expected to cost \$300m and to show benefits of \$450m over a 10-year period. Overall, by 1995, the program is expected to produce energy savings of 25-30% p.a., or \$135-\$155 p.a. for the average resident, at 1980 prices.

The program is funded by HUD contracts and grants, a Portland City conservation budget, and private sector contributions. The City budget for the first year of implementation is \$112,000.

MAJOR RELATED LITERATURE REFERENCES:

1. Details of the Portland methodology study (adopted by over 100 cities) are available in an eleven volume set from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22151. One of these, Project Overview (PB276789/AS, \$6) provides a retrospective look at the project, its costs, problems and pitfalls, and also a summary of each of the other ten volumes.

PROGRAM NAME:

Fitchburg Action to Conserve Energy (FACE)

INDEX NUMBER:

US-C-22

ORGANIZATION:

City of Fitchburg

July, 1980

CONTACT:

Timothy M. Stewart
 Planning Coordinator
 Office of the Planning Coordinator
 City of Fitchburg
 Fitchburg, Massachusetts 01420
 Tel: (617) 345-1018

PROGRAM TYPE:

Voluntary
 Financial/Non-financial
 Community
 Regional

PROGRAM DESCRIPTION:

Inspired by rapidly rising fuel costs and the City's high average household oil consumption (1200 gallons p.a.) Fitchburg developed a low-cost, total community winterization program, with the aim of reducing home heating bills by 25%.

Under FACE the City staffed 9 neighborhood training centers to teach the basics of winterization at different locations around the town. Recommendations centered on low-cost, high-yield activities such as caulking, weatherstripping, hot water heat insulation, cleaning cracks in ducts and lowering water heater thermostats. Families unable to perform these tasks themselves were able to get help from trained volunteer work crews organized by each center. DOE and HUD financing enabled average material costs to be kept to less than \$25 per home, and free for lower income people willing to undergo the self-help training program.

A FACE advisory council, comprised of all city sectors, spearheaded an aggressive radio, television, mail and door-to-door campaign promoting the program.

The program ran for 8 weeks from October to December 1979 and resulted in over 3500 of Fitchburg's 10,000 householders attending the training sessions, with 1800 receiving weatherization kits and 350 requesting work crew assistance.

COSTS-BENEFITS:

Fitchburg received \$210,000 in grants, materials subsidies, and evaluation assistance from HUD, DOE, Massachusetts Office of Energy Resources and Massachusetts State. Savings of 2.1 million gallons of oil each winter heating season have been projected.

MAJOR RELATED LITERATURE REFERENCES:

1. The Fitchburg Action to Conserve Energy Handbook, available from above contact.
2. Carrington, A. David, "A Report on the Potential of Consumer Animation for Energy Conservation", Saint John, New Brunswick, Community Planning Association of Canada, 1977.

PROGRAM NAME:

Public Information Program

INDEX NUMBER:CAN-C-31
July, 1980ORGANIZATION:

BC Hydro

PROGRAM TYPE:Voluntary
Non-financial
Information
RegionalCONTACT:Dr. Tim Newton
Energy Conservation Division
BC Hydro
970 Burrard Street
Vancouver, B.C. V6Z 1Y3
Tel: (604) 663-3583PROGRAM DESCRIPTION:

BC Hydro undertakes, in conjunction with federal and provincial energy agencies, an energy conservation program. The Advertising and Public Relations program uses radio and TV commercials, newspaper advertising, outdoor posters, transit car cards, and billboards.

The utility also participates in radio and TV conservation interviews, public education addresses to business, school and other interest groups. Slide presentations and other educational materials have been developed and made available to teachers through Hydro's district offices. A standard one-day workshop presentation is also made available.

BC Hydro organizes shopping centre displays to promote insulation and other measures, in conjunction with its thermography program. The utility is now the largest distributor of federal energy conservation literature (outside the federal government) in British Columbia.

COSTS-BENEFITS:

Unknown

MAJOR RELATED LITERATURE REFERENCES:

1. Craig, C. Samuel and John M. McCann, "The Impact of Persuasive Communications on Energy Conservation", Energy Systems and Policy, Vol. 2, #4, April 1978, pp. 433-447.
2. Barnaby, David J. and Richard C. Rizenstein, "Energy/Pollution AIO Segments and Information Source Utilization", Paper presented at Southern Marketing Association Annual Conference, New Orleans, November, 1978.

APPENDIX II

QUESTIONNAIRE USED IN SURVEY OF PROFESSIONALS

EVALUATION OF ENERGY CONSERVATION PROGRAMS

ENERGY PROFESSIONALS PANEL
OCTOBER 1980

Return to:

J.D. CLAXTON
BEHAVIORAL ENERGY RESEARCH SERIES
#203 - 2053 Main Mall
University of British Columbia
Vancouver, CANADA V6T 1Y8

EVALUATION OF ENERGY CONSERVATION PROGRAMS

QUESTIONNAIRE

In responding to the following questionnaire we request that you carefully read the instructions at the beginning of each section.

The questionnaire contains three sections:

Section 1	An evaluation of the feasibility, costs and benefits of energy conservation programs
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Section 2	Identification and discussion of the best and worst programs in the Directory
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Section 3	Classification data
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Section 1

EVALUATION OF FEASIBILITY, COSTS, AND
BENEFITS OF ENERGY CONSERVATION PROGRAMS

THIS SECTION IS TO BE COMPLETED USING THE ANNOTATED DIRECTORY OF ENERGY CON-
SERVATION PROGRAMS

Drawing on your experience and the information provided in the Directory, please consider each program in terms of implementation in Canada on a nation-wide basis. In this context what is your assessment of (1) administrative feasibility, (2) acceptability to consumers, (3) total costs, (4) energy savings benefits, (5) fairness and equity, and (6) overall desirability.

Administrative Feasibility: is intended to refer to possible political, legal and administrative barriers to program implementation and operation. Feasibility is not intended to refer to consumer acceptance/non-acceptance of the program.

Acceptability to Consumers: is intended to refer to the extent to which consumers accept and adopt voluntary conservation suggestions, or find imposed restrictions acceptable.

Total Costs: are intended to include all expenses to the program sponsors regarding development, implementation and operation over a five year operation.

Energy Savings Benefits: are intended to include the actual energy conservation achieved over a five year operation. Actual energy conservation could be viewed as the potential conservation (if everything worked perfectly) reduced by some amount to recognize that all consumers may not adopt the

Section 1

intended conservation behaviors:

Fairness and Equity: is intended to refer to the extent to which the program will impact equality or require similar sacrifices for all segments of the population.

Overall Desirability: is intended to be a summary of your overall evaluation of the program based on whatever criteria you consider important.

Please rate each program on each of the six factors, using the 5-point scale where 1=low, and 5=high. For example, if you considered the Home Planning Kit (page 1 of the Directory) to have very high feasibility in terms of a nationwide program, you might circle "5" on the administrative feasibility scale.

Section 1

Program Evaluation

(For each program please circle one rating for each of the six dimensions.)

Prog. No.	Program Name	Administrative Feasibility		Acceptability To Consumers		Total Costs		Energy Savings Benefits		Fairness & Equity		Overall Desirability				
		Low	High	Low	High	Low	High	Low	High	Low	High	Low	High			
<u>Home Heating</u>																
1.	Home Planning Kit	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
2.	Home Insulation Program	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
3.	ENERSAVE for Home Insulation	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
4.	Canadian Home Insulation Program	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
5.	Home Insulation and Energy Conservation Program	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
6.	Home Energy Check	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
7.	Home Conservation Requirement	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
8.	Thermography Flyover	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
9.	Memphis Solar Water Heating Demonstration	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
10.	Solar Domestic Hot Water Demonstration	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
11.	Passive Solar Home Project	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
12.	Heat Pump Financing Program	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
13.	Insulation Financing Program	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
14.	Home Insulation Loan Program	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
15.	California 55% Solar Tax Credit	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

Section 1

Program Evaluation

Item No.	Program Name	Administrative Feasibility		Acceptability To Consumers		Total Costs		Energy Savings Benefits		Fairness & Equity		Overall Desirability				
		Low	High	Low	High	Low	High	Low	High	Low	High	Low	High			
16.	Wisconsin Alternative Energy Tax Credit	1	2	1	4	5	1	2	3	4	5	1	2	3	4	5
17.	Air-Conditioning Cycling Program	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
18.	Manpower Training	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
19.	Residential Energy Conservation Schedule	1	2	1	4	5	1	2	3	4	5	1	2	3	4	5
20.	EnergyMark	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Household Appliances																
21.	ENERGIDE	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Private Transportation																
22.	Project Pool It	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
23.	Computer Computer	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
24.	Speed Limits	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
25.	Operation Tune-Up	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
26.	Carless Days	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
27.	Restrictions on Gas Retail Sale Hours	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
28.	Canada's Emergency Gas Rationing Plan	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

Section 1

Page No.	Program Name	Community Involvement										Overall Desirability				
		Administrative Feasibility		Acceptability To Consumers		Total Costs		Energy Savings Benefits		Fairness & Equity						
		Low	High	Low	High	Low	High	Low	High	Low	High	Low	High			
<u>Community Involvement</u>																
29.	U.S. Federal Standby Emergency Energy Conservation Plan	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
30.	Eneraction	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
31.	Total Community Energy Conservation Project	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
32.	Portland Energy Conservation Project	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
33.	Fitchburg Action to Conserve Energy (FACE)	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
34.	Public Energy Conservation Information Program	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

Section 2

IDENTIFICATION OF THE 5 BEST AND 5 WORST
DIRECTORY PROGRAMS

(1) Now that you have evaluated each Directory program we would like you to identify the best 5 and worst 5 programs for implementation in Canada on a nation-wide basis.

(2) To help us understand the processes by which you arrive at these groups of programs we would also appreciate you listing the reasons/criteria which influenced your choice.

(3) Finally for the 'best' programs we would like suggestions you may have, if any, for major changes that could be made to further enhance the program.

Best 5 Programs (1=best, 2=second best, etc.)

1. Program Name: _____

Reasons for selection: _____

Major change suggestions: _____

2. Program Name: _____

Reasons for selection: _____

Major change suggestions: _____

3. Program Name: _____

Reasons for selection: _____

Major change suggestions: _____

4. Program Name: _____

Reasons for Selection: _____

Major change suggestions: _____

5. Program Name: _____
Reasons for Selection: _____

Major change suggestions: _____

5 Worst Programs (1=worst, 2=second worst, etc.)

1. Program Name: _____
Reasons for Selection: _____

2. Program Name: _____
Reasons for Selection: _____

3. Program Name: _____
Reasons for Selection: _____

4. Program Name: _____
Reasons for Selection: _____

5. Program Name: _____
Reasons for Selection: _____

Section 3

-9-

Having evaluated these programs we would now like to ask for your self-assessment regarding your expertise in this area. Could you please rate yourself on the following scale.

1. Relative to other professionals concerned or involved with consumer energy conservation programs I would consider my level of expertise to be: (check one for each program field)

Conservation program fields:	Relatively little expertise	Moderate: not much more or less than others	More expertise than most others	One of the top experts in the field
. All types				
. Home heating				
. Household appliance				
. Private transportation				
. Community involvement				

2. Considering the various stages of consumer energy conservation program development would you please indicate the extent of your experience with each stage. (Circle one for each stage)

	Extent of Experience				
	Very little				Very great
Program formulation	1	2	3	4	5
Program implementation	1	2	3	4	5
Program operations	1	2	3	4	5
Program evaluation	1	2	3	4	5

3. How many years have you been involved in the energy field? _____ years.

4. With what type of organization? (check one or more)

Government: Federal _____ Provincial _____ Municipal _____
 Utility: _____
 Private Industry: _____
 Para-public (crown corporation, etc.): _____
 Educational/Research institution: _____
 Other, please specify: _____

5. Finally, we would ask you to list the two people (other than yourself) in Canada who you feel are most qualified to evaluate consumer energy conservation programs.

Name: _____
 Title: _____
 Organization: _____

Name: _____
 Title: _____
 Organization: _____

APPENDIX III

QUESTIONNAIRE USED IN SURVEY OF CONSUMERS

CANADIAN FAMILY OPINION

Vancouver Toronto Ottawa Montreal



1075 Bay Street, Suite 200
Toronto, Ontario M5S 2X4
Telephone (416) 924-5751

Dear Homemaker:

Quite some time ago, you and your husband participated in a survey concerning energy. Today's questionnaire is on the same topic. I'm sure you will find it quite interesting to answer.

Enclosed you will find three questionnaires. I would like you to complete the Household Questionnaire (white), and the Female Head of Household Questionnaire (green). The third questionnaire (yellow) is to be completed by the Male Head of Household.

For your co-operation and prompt return of this questionnaire, we will be offering a draw of six prizes of \$100.00 each. A random draw will be made from all eligible entries received on or before February 20th, 1981. In order to win, the selected homemaker must first answer a skill-testing question. Good Luck to you! And thanks ever so much.

Sincerely,

CAROLE ADAM
K6297

SPECIAL DRAW

6 prizes of \$100.00 each.

Questionnaires must be received by February 20th/81.

CANADIAN FAMILY OPINION
TORONTO--ONTARIO

STUDY K6297

1/5-

6-1

HOUSEHOLD QUESTIONNAIRE

This questionnaire is to be completed by you, the homemaker, with
help from your spouse, if necessary.



HOUSEHOLD QUESTIONNAIRE

SECTION A

HOME HEATING ACTIVITIES

Within the past two years, which, if any, of the following steps have you taken to reduce the energy used in heating your home? Please circle a number under "Have Done" or "Have Not Done" for each question. If you have taken the steps more than two years ago, please circle the appropriate number under "Done More Than Two Years Ago". If the question is not applicable (if, for example, you do not have a fireplace), please circle under the "Not Applicable" category.

	HAVE DONE	HAVE NOT DONE	DONE MORE THAN TWO YEARS AGO	NOT APPLI- CABLE	
Installed Weatherstripping And Caulking On Doors And Windows	1	2	3	4	(7-
Installed Storm Windows	1	2	3	4	(8-
Installed Storm Doors	1	2	3	4	(9-
Added Insulation To The Attic	1	2	3	4	(10-
Added Insulation In Basement	1	2	3	4	(11-
Added Insulation In House Walls	1	2	3	4	(12-
Added Insulation To Water Heater And Pipes	1	2	3	4	(13-
Added Insulation To A Floor Over An Unheated Area ...	1	2	3	4	(14-
Added Insulated Siding To The House	1	2	3	4	(15-
Upgraded To Double Or Triple Glazed Windows	1	2	3	4	(16-
Modified The Furnace To Increase Its Energy Efficiency	1	2	3	4	(17-
Installed A Timer-Controlled Thermostat	1	2	3	4	(18-
Modified The Fireplace To Increase Its Energy Efficiency	1	2	3	4	(19-
Turned Down The Thermostat On The Hot Water Heater ..	1	2	3	4	(20-
Other (PLEASE SPECIFY) _____	1	2	3	4	(21-

SECTION B OTHER ACTIVITIES

	<u>YES</u>	<u>NO</u>	<u>NOT</u> <u>APPLICABLE</u>	
1. Have you participated in the ENERSAVE program? (This is the free information service provided by the federal government which analyzes your home insulation requirements by computer and sends you the results by mail.)	1	2	3	(22-
2. Have you applied for and received a government grant for insulating your home?	1	2	3	(23-
IF "YES":				
a) Was part or all received from the federal government?	1	2	3	'24-
b) Was part or all received from the provincial government?	1	2	3	(25-
3. Have you had a home energy audit done? (This involves having a certified service person examine the House and rate it for energy efficiency.)	1	2	3	(26-
4. Have you read any of the following government publications?				
--"100 Ways To Save Energy In The Home"	1	2	3	(27-
--"The Car Mileage Booklet"	1	2	3	(28-
--"Keeping The Heat In"	1	2	3	(29-
5. In the last year, has your furnace been checked by a service person?	1	2	3	(30-
6. In the last year, have the filters on the furnace been changed?	1	2	3	(31-
7. In the winter, do you close off your basement or do you heat it?				
Close It Off	1			
Heat It	2			(32-
No Basement	3			
8. In the winter, do you close off the heat to any rooms in your home?				
YES	1			
NO	2			(33-
9. In the winter, at what temperature do you usually set your thermostat?				
a) During The Day?			OF	34/35-
b) When You Go To Bed?			OF	36/37-
c) In The Evening When At Home?			OF	38/39-
d) When Nobody Is Home For 4 To 5 Hours?			OF	40/41-
e) When Nobody Is Home For 25 Hours Or More?			OF	42/43-
OR f) Do Not Change Thermostat: It Is Left At			OF	44/45-
OR g) No Thermostat				46-
10. What is the principal method of heating your home? Please circle one number.				
Electricity	1			
Oil	2			(47-
Natural Gas	3			
Other	4			

SECTION C

AUTOMOBILE INFORMATION

1. How many vehicles are owned, leased or usually kept at your home by the people in your household? (BY VEHICLES I MEAN CARS, VANS OR LIGHT TRUCKS.)

NUMBER OF VEHICLES IN YOUR HOUSEHOLD: WRITE IN NUMBER: _____

(48-

IF THERE ARE NO CARS, VANS OR LIGHT TRUCKS IN YOUR HOUSEHOLD, CHECK HERE ☐ AND GO ON TO SECTION D.

2. Please fill in the columns below for each vehicle. If there are more than 3 vehicles in your household, just fill in the information about 3 of them-- preferably the three that get used the most. It doesn't matter which one you fill in as "Vehicle #1".

NOTE: Some of the questions ask for information in "miles". If you answer in kilometers, please put "KM" beside your answer.

	FOR EXAMPLE ONLY	VEHICLE #1	VEHICLE #2	VEHICLE #3
Make	Chev.	.....	.....	.....
Model	Impala	.....	.....	.....
Year	'74	.....	.....	.....
Car, Station Wagon, Van, Light Truck	Station Wagon	.....	.....	.....
Number Of Cylinders	8	.....	.....	.....
Air Conditioner	YES ☒ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Miles Per Gallon On Highway ..	18	.....	.....	.....
Miles Per Gallon In City	13	.....	.....	.....
Miles Driven In Last 12 Mos. .	11,500	.....	.....	.....
IF OWNED LESS THAN 12 MONTHS:				
Number Of Months Owned Now ...	.....	.....	.....	.....
Miles Since Purchase .....	.....	.....	.....	.....
Percentage Of Total Driving Done In City	70%	.....	.....	.....
Number Of Days Per Week Taken To Work Or School	5	.....	.....	.....
Distance To Work Or School In Miles (One Way)	3½	.....	.....	.....
Used By Someone For Their Work, Such As Sales Calls	YES ☐ NO ☒	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Has This Vehicle Been Tuned-Up In The Last Six Months?	YES ☐ NO ☒	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Has This Vehicle Had The Tire Pressure Checked In The Last Two Months?	YES ☒ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐

49/50-	58/60-	69-	6-2	12/13-	24-	30/31-	37/38-	50-
51-	61/62-	70-	7/8-	14/15-	25/26-	32-	39/41-	51-
52-	63/65-	71-	9-	16/18-	27-	33-	42/43-	52-
53-	66-	(72/80)	10-	19/20-	28-	34-	44/46-	
54/55-	67/68-		11-	21/23-	29-	35/36-	47-	
56/57-							48/49-	

SECTION D**HOUSEHOLD INFORMATION**

Now, we'd like to get some current information on you and your family.

1. How many people, including yourself, are now living at home? (WRITE IN NUMBER:) _____ (53/54-
2. How many of these people are sixteen years of age or older? (WRITE IN NUMBER:) _____ (55/56-
3. What is your marital status?

Married	1	(57-
Single	2	
Widowed	3	
Divorced/Separated	4	
Common Law	5	

4. Please complete the following employment information about both you and your husband. (If you have no husband, leave that part blank.)

	<u>YOURSELF</u>	<u>YOUR HUSBAND</u>	
Work Outside The Home For Money:			
Full-Time	1	1	(58-
Part-Time	2	2	(59-
Do Not Work Outside The Home For Money	3	3	

5.

TOTAL ANNUAL INCOME--This consists of wages, salaries, income from self-employment, rents, dividends, pensions, government payments, etc.--in short, all taxable income before tax deductions. In the case of people who own a business or who work only on commission, check the space which shows the income after deduction of the expenses of being in business.

Below is a number of categories of income. Please check, under A, the annual income of the PRINCIPAL WAGE EARNER in your household. Then, under B, check your annual TOTAL FAMILY INCOME.

	<u>A.</u>		<u>B.</u>	
	PRINCIPAL		TOTAL	
	WAGE EARNER		FAMILY INCOME	
1. Less Than \$3,000 Per Year	1	1		(60/61-
2. \$ 3,000 To \$ 4,999 Per Year	2	2		
3. \$ 5,000 To \$ 7,499 Per Year	3	3		(62/63-
4. \$ 7,500 To \$ 9,999 Per Year	4	4		
5. \$10,000 To \$12,499 Per Year	5	5		
6. \$12,500 To \$14,999 Per Year	6	6		
7. \$15,000 To \$17,499 Per Year	7	7		
8. \$17,500 To \$19,999 Per Year	8	8		
9. \$20,000 To \$24,999 Per Year	9	9		
10. \$25,000 To \$29,999 Per Year	10	10		
11. \$30,000 To \$34,999 Per Year	11	11		
12. \$35,000 To \$49,999 Per Year	12	12		
13. \$50,000 Or More Per Year	13	13		

DID YOU CHECK ONE BOX UNDER "A" AND ONE BOX UNDER "B"?

THANK YOU VERY MUCH.

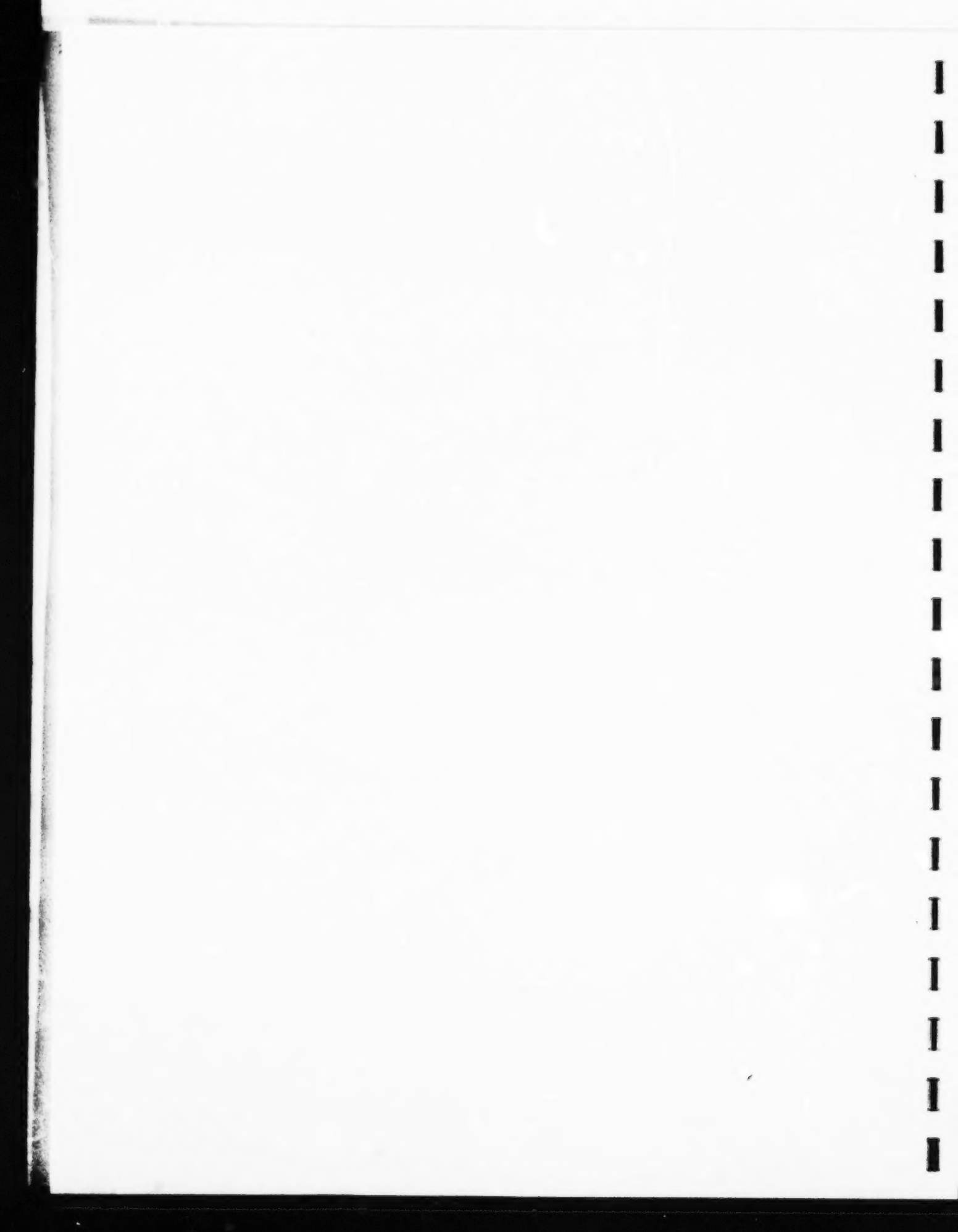
CANADIAN FAMILY OPINION
TORONTO--ONTARIO

STUDY K6297

2-5

6-3

FEMALE HEAD OF HOUSEHOLD QUESTIONNAIRE



INDIVIDUAL QUESTIONNAIRE

SECTION 1

OPINIONS ON CONSERVATION PROGRAMS

I'd like to ask your opinions about ten programs which are designed to conserve energy. These programs would be run by government departments. I would like to know what you think about each program, described below, in terms of acceptability and importance. That is, for each of the ten programs, would you please rate it on:

EXAMPLE

Acceptability to Canadians. Do you feel that most Canadians would be willing to accept such a program? Rate each program from 1 to 6, as follows:

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable
----------------------------	---	---	---	---	---	---	--------------------------

Importance for Canadian energy conservation. Do you feel that the program should be considered extremely important by the Canadian government, or not important at all? Again, rate each program:

Not Important At All	1	2	3	4	5	6	Extremely Important
-------------------------	---	---	---	---	---	---	------------------------

PLEASE BE SURE TO RATE EACH PROGRAM FOR ITS ACCEPTABILITY AND IMPORTANCE.

ENERGY CONSERVATION PROGRAMS

Program 1.

A home energy audit conducted by a trained advisor. The advisor assesses the energy efficiency of the home and suggests weatherization and insulation improvements, their costs and benefits, and provides a list of approved local insulation contractors. The cost of this audit (\$125 per home) would be paid for by the government.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(7-
Not Important At All	1	2	3	4	5	6	Extremely Important	(8-

Program 2.

The same program as described above (in Program 1), except the cost of the audit (\$125 per home) would be paid partly by the homeowner (they would pay \$25) and the rest (\$100) would be paid by the government.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(9-
Not Important At All	1	2	3	4	5	6	Extremely Important	(10-

Program 3.

The same program as described above (in Program 1), except the entire cost of the audit (\$125 per home) would be paid for by the homeowner.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(11-
Not Important At All	1	2	3	4	5	6	Extremely Important	(12-

Program 4. A home energy audit in which homeowners complete a questionnaire on their house size and shape and amount of insulation. The questionnaire is sent away for computer processing. The homeowner is sent back a list of recommended home insulation procedures, what they would cost and how much energy would be saved. The cost of this audit (\$10 per home) would be paid for by the government.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(13-
Not Important At All	1	2	3	4	5	6	Extremely Important	(14-

Program 5. A do-it-yourself home energy audit kit. The homeowner does the audit using kit instructions, and analyzes the data with an energy work-book. The cost of this audit (\$1 per home) would be paid for by the government.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(15-
Not Important At All	1	2	3	4	5	6	Extremely Important	(16-

Program 6. Homeowners who insulate their homes would be eligible for a government grant of up to \$800 to cover the costs of the insulation.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(17-
Not Important At All	1	2	3	4	5	6	Extremely Important	(18-

Program 7. Homeowners who insulate their homes would be eligible for a government grant of up to \$1,200 to cover the costs of insulation.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(19-
Not Important At All	1	2	3	4	5	6	Extremely Important	(20-

Program 8. Homeowners who insulate their homes would be eligible for a government loan for the insulation costs at an interest rate of 5 per cent per year. The loan would be paid back over a three-year period.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(21-
Not Important At All	1	2	3	4	5	6	Extremely Important	(22-

Program 9. All highway speed limits in Canada to be set at 55 miles per hour (90 kilometers per hour). These speed limits would be strictly enforced and violators would lose their license for six months after two violations.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(23-
Not Important At All	1	2	3	4	5	6	Extremely Important	(24-

Program 10. A commuter computer service where individuals who want carpool partners would phone a centre number and provide the receptionist with the information concerning location of house and work place, etc. A computerized match list is mailed to the individual within two working days. The cost of this service (\$5 per commuter) would be paid by the government.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(25-
Not Important At All	1	2	3	4	5	6	Extremely Important	(26-

SECTION 2

VIEWS ON HOME ENERGY CONSERVATION PROGRAMS

In the previous section, you were asked to indicate your opinions related to a number of specific conservation programs. In this section, we would like to obtain your views on consumer home energy conservation programs such as insulation, weatherstripping and home energy audits.

Listed below are a number of statements about these types of programs. After each statement the numbers 1 to 6 appear. The lower the number, the more you disagree with the statement. The higher the number, the more you agree with the statement. The numbers from 1 to 6 can be described as follows:

1. I definitely disagree with the statement.
2. I generally disagree with the statement.
3. I moderately disagree with the statement.
4. I moderately agree with the statement.
5. I generally agree with the statement.
6. I definitely agree with the statement.

There are no right or wrong answers. For each statement, please circle the number that best describes your feelings about that statement. You may think that some items are similar but no two statements are exactly the same. Please be sure to mark one number for each statement.

STATEMENT:	DEFINITELY DISAGREE	DEFINITELY AGREE
CONSUMER HOME ENERGY CONSERVATION PROGRAMS SHOULD:		
Be Concentrated In Poorer Regions Of Canada	1 .. 2 .. 3 .. 4 .. 5 .. 6	(27-
Be Focused On Regions Of Canada Having The Coldest Climates	1 .. 2 .. 3 .. 4 .. 5 .. 6	(28-
Be Aimed At Regions Of Canada Which Depend On Fuel Oil For Home Heating	1 .. 2 .. 3 .. 4 .. 5 .. 6	(29-
Be Available Only To Households Having Total Annual Incomes Below \$15,000	1 .. 2 .. 3 .. 4 .. 5 .. 6	(30-
Be Paid For By Those Consumers Who Use Them, Not By The Government	1 .. 2 .. 3 .. 4 .. 5 .. 6	(31-
Be Paid For Partly By Consumers Who Use Them And Partly By Governments From Tax Revenues	1 .. 2 .. 3 .. 4 .. 5 .. 6	(32-
Be Subsidized By Governments For Low Income Households Only	1 .. 2 .. 3 .. 4 .. 5 .. 6	(33-

VIEWS ON ENERGY CONSERVATION PROGRAMS IN GENERAL

SECTION 3

In this section, I'd like to ask your opinions on consumer energy conservation programs in general. Again, could you please circle a number that best describes your feelings about that statement.

STATEMENT:	DEFINITELY DISAGREE	DEFINITELY AGREE
All Home Owners Should Be Required To Modify Existing Homes To Meet Energy Efficiency Standards In Areas Such As Insulation, Furnace Efficiency, Weatherstripping, etc., By 1983	1 ... 2 ... 3 ... 4 ... 5 ... 6	(34-
All Automobiles Sold In Canada Should Be Required To Obtain A Minimum Of 10 km/litre (28 Miles Per Gallon) By 1983	1 ... 2 ... 3 ... 4 ... 5 ... 6	(35-
All New Appliances And Autos Should Have Labels Attached To Them Which Show How Much Energy They Use	1 ... 2 ... 3 ... 4 ... 5 ... 6	(36-
Information Booklets Should Be Provided For Consumers To Encourage Them To Choose Energy Efficient Products When Shopping	1 ... 2 ... 3 ... 4 ... 5 ... 6	(37-
Energy Conservation Programs Should, By Law, Require All Cars To Have Two Tune-Ups Each Year To Improve Engine Efficiency	1 ... 2 ... 3 ... 4 ... 5 ... 6	(38-
Energy Prices Should Continue To Rise Until People Feel Forced To Consume Less Energy	1 ... 2 ... 3 ... 4 ... 5 ... 6	(39-
Information Booklets Should Be Provided To Help People Learn How To Reduce Their Auto Gasoline Consumption	1 ... 2 ... 3 ... 4 ... 5 ... 6	(40-
There Should Be A System Of Grants Or Tax Credits That Would Apply To The Purchase Or Installation Of Energy Conserving Products	1 ... 2 ... 3 ... 4 ... 5 ... 6	(41-
Programs Should Be Directed At Manufacturers Of Energy Consuming Products And Home Builders Rather Than Consumers	1 ... 2 ... 3 ... 4 ... 5 ... 6	(42-
Programs Should Be More Concerned With Reducing Automobile Gasoline Consumption Than Reducing Energy Used For Home Heating	1 ... 2 ... 3 ... 4 ... 5 ... 6	(43-
Programs Should Be Focused On Reducing Oil Rather Than Natural Gas And Electricity Consumption	1 ... 2 ... 3 ... 4 ... 5 ... 6	(44-
Programs Should Be Designed To Severely Limit Energy Consumption For Leisure And Vacation Travel	1 ... 2 ... 3 ... 4 ... 5 ... 6	(45-
Programs Should Require All Consumers To Reduce Their Energy Consumption By Equal Amounts	1 ... 2 ... 3 ... 4 ... 5 ... 6	(46-
Programs Should Require Heavy Energy Users To Cut Back Their Consumption More Than Low Energy Users	1 ... 2 ... 3 ... 4 ... 5 ... 6	(47-
Price Increases Should Be Used Rather Than Rationing To Achieve Lower Levels Of Energy Use	1 ... 2 ... 3 ... 4 ... 5 ... 6	(48-
All Dwellings Should Be Required To Undergo An "Energy Audit" To Determine How Much Energy Is Being Used Inefficiently	1 ... 2 ... 3 ... 4 ... 5 ... 6	(49-

SECTION 4

IMPORTANCE OF STEPS TO CONSERVE ENERGY

Finally, I'd like to ask you about some steps people could take to conserve energy. For each step, could you please indicate how much energy you think could be saved, from "very high energy savings" to "negligible or negative energy savings" or somewhere in between. PLEASE BE SURE TO CIRCLE ONE NUMBER FOR EACH STATEMENT.

STATEMENT:	VERY HIGH ENERGY SAVINGS	NEGLECTIBLE OR NEGATIVE ENERGY SAVINGS
Changing From 100 W To 60 W Light Bulbs In Your House	1	(50-
Adding Storm Doors	1	(51-
Using Radial Tires On Your Car	1	(52-
Installing Fluorescent Lights	1	(53-
Installing A Heat Pump	1	(54-
Insulation Of Basement Walls	1	(55-
Using A Diesel Automobile	1	(56-
Using Your Fireplace As Much As Possible	1	(57-
Using Premium Leaded Fuel	1	(58-
Going To Work By Transit Instead Of Car	1	(59-
Adding Skylights To Your Home	1	(60-
Having Metal Frame Windows	1	(61-
Installing An Airtight Wood Stove	1	(62-
Switching From Oil To Gas Heating	1	(63-
Lowering Maximum Heating Temperature From 20oC To 18oC	1	(64-

65/80

THANK YOU VERY MUCH!

CANADIAN FAMILY OPINION
TORONTO--ONTARIO

STUDY K6297

1-5

6-4

MALE HEAD OF HOUSEHOLD QUESTIONNAIRE

IF THERE IS NO MALE HEAD OF HOUSEHOLD, PLEASE CHECK HERE
AND RETURN THIS QUESTIONNAIRE TO ME. THANK YOU.

INDIVIDUAL QUESTIONNAIRE

SECTION 1

OPINIONS ON CONSERVATION PROGRAMS

I'd like to ask your opinions about ten programs which are designed to conserve energy. These programs would be run by government departments. I would like to know what you think about each program, described below, in terms of acceptability and importance. That is, for each of the ten programs, would you please rate it on:

EXAMPLE

Acceptability to Canadians. Do you feel that most Canadians would be willing to accept such a program? Rate each program from 1 to 6, as follows:

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable
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Importance for Canadian energy conservation. Do you feel that the program should be considered extremely important by the Canadian government, or not important at all? Again, rate each program:

Not Important At All	1	2	3	4	5	6	Extremely Important
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PLEASE BE SURE TO RATE EACH PROGRAM FOR ITS ACCEPTABILITY AND IMPORTANCE.

ENERGY CONSERVATION PROGRAMS

Program 1.

A home energy audit conducted by a trained advisor. The advisor assesses the energy efficiency of the home and suggests weatherization and insulation improvements, their costs and benefits, and provides a list of approved local insulation contractors. The cost of this audit (\$125 per home) would be paid for by the government.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(7-
Not Important At All	1	2	3	4	5	6	Extremely Important	(8-

Program 2.

The same program as described above (in Program 1), except the cost of the audit (\$125 per home) would be paid partly by the homeowner (they would pay \$25) and the rest (\$100) would be paid by the government.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(9-
Not Important At All	1	2	3	4	5	6	Extremely Important	(10-

Program 3.

The same program as described above (in Program 1), except the entire cost of the audit (\$125 per home) would be paid for by the homeowner.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(11-
Not Important At All	1	2	3	4	5	6	Extremely Important	(12-

Program 4.

A home energy audit in which homeowners complete a questionnaire on their house size and shape and amount of insulation. The questionnaire is sent away for computer processing. The homeowner is sent back a list of recommended home insulation procedures, what they would cost and how much energy would be saved. The cost of this audit (\$10 per home) would be paid for by the government.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(13-
Not Important At All	1	2	3	4	5	6	Extremely Important	(14-

Program 5.

A do-it-yourself home energy audit kit. The homeowner does the audit using kit instructions, and analyzes the data with an energy work-book. The cost of this audit (\$1 per home) would be paid for by the government.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(15-
Not Important At All	1	2	3	4	5	6	Extremely Important	(16-

Program 6.

Homeowners who insulate their homes would be eligible for a government grant of up to \$800 to cover the costs of the insulation.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(17-
Not Important At All	1	2	3	4	5	6	Extremely Important	(18-

Program 7.

Homeowners who insulate their homes would be eligible for a government grant of up to \$1,200 to cover the costs of insulation.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(19-
Not Important At All	1	2	3	4	5	6	Extremely Important	(20-

Program 8.

Homeowners who insulate their homes would be eligible for a government loan for the insulation costs at an interest rate of 5 per cent per year. The loan would be paid back over a three-year period.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(21-
Not Important At All	1	2	3	4	5	6	Extremely Important	(22-

Program 9.

All highway speed limits in Canada to be set at 55 miles per hour (90 kilometers per hour). These speed limits would be strictly enforced and violators would lose their license for six months after two violations.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(23-
Not Important At All	1	2	3	4	5	6	Extremely Important	(24-

Program 10.

A commuter computer service where individuals who want carpool partners would phone a centre number and provide the receptionist with the information concerning location of house and work place, etc. A computerized match list is mailed to the individual within two working days. The cost of this service (\$5 per commuter) would be paid by the government.

Completely Unacceptable	1	2	3	4	5	6	Completely Acceptable	(25-
Not Important At All	1	2	3	4	5	6	Extremely Important	(26-

SECTION 2

- 3 -

VIEWS ON HOME ENERGY CONSERVATION PROGRAMS

In the previous section, you were asked to indicate your opinions related to a number of specific conservation programs. In this section, we would like to obtain your views on consumer home energy conservation programs such as insulation, weatherstripping and home energy audits.

Listed below are a number of statements about these types of programs. After each statement the numbers 1 to 6 appear. The lower the number, the more you disagree with the statement. The higher the number, the more you agree with the statement. The numbers from 1 to 6 can be described as follows:

1. I definitely disagree with the statement.
2. I generally disagree with the statement.
3. I moderately disagree with the statement.
4. I moderately agree with the statement.
5. I generally agree with the statement.
6. I definitely agree with the statement.

There are no right or wrong answers. For each statement, please circle the number that best describes your feelings about that statement. You may think that some items are similar but no two statements are exactly the same. Please be sure to mark one number for each statement.

STATEMENT:

DEFINITELY
DISAGREEDEFINITELY
AGREECONSUMER HOME ENERGY CONSERVATION PROGRAMS
SHOULD:

Be Concentrated In Poorer Regions Of Canada	1 .. 2 .. 3 .. 4 .. 5 .. 6	(27-
Be Focused On Regions Of Canada Having The Coldest Climates	1 .. 2 .. 3 .. 4 .. 5 .. 6	(28-
Be Aimed At Regions Of Canada Which Depend On Fuel Oil For Home Heating	1 .. 2 .. 3 .. 4 .. 5 .. 6	(29-
Be Available Only To Households Having Total Annual Incomes Below \$15,000	1 .. 2 .. 3 .. 4 .. 5 .. 6	(30-
Be Paid For By Those Consumers Who Use Them, Not By The Government	1 .. 2 .. 3 .. 4 .. 5 .. 6	(31-
Be Paid For Partly By Consumers Who Use Them And Partly By Governments From Tax Revenues	1 .. 2 .. 3 .. 4 .. 5 .. 6	(32-
Be Subsidized By Governments For Low Income Households Only	1 .. 2 .. 3 .. 4 .. 5 .. 6	(33-

VIEWS ON ENERGY CONSERVATION PROGRAMS IN GENERAL

SECTION 3

In this section, I'd like to ask your opinions on consumer energy conservation programs in general. Again, could you please circle a number that best describes your feelings about that statement.

STATEMENT:	DEFINITELY DISAGREE	DEFINITELY AGREE
All Home Owners Should Be Required To Modify Existing Homes To Meet Energy Efficiency Standards In Areas Such As Insulation, Furnace Efficiency, Weatherstripping, etc., By 1983	1 ... 2 ... 3 ... 4 ... 5 ... 6	(34-
All Automobiles Sold In Canada Should Be Required To Obtain A Minimum Of 10 km/litre (28 Miles Per Gallon) By 1983	1 ... 2 ... 3 ... 4 ... 5 ... 6	(35-
All New Appliances And Autos Should Have Labels Attached To Them Which Show How Much Energy They Use	1 ... 2 ... 3 ... 4 ... 5 ... 6	(36-
Information Booklets Should Be Provided For Consumers To Encourage Them To Choose Energy Efficient Products When Shopping	1 ... 2 ... 3 ... 4 ... 5 ... 6	(37-
Energy Conservation Programs Should, By Law, Require All Cars To Have Two Tune-Ups Each Year To Improve Engine Efficiency	1 ... 2 ... 3 ... 4 ... 5 ... 6	(38-
Energy Prices Should Continue To Rise Until People Feel Forced To Consume Less Energy	1 ... 2 ... 3 ... 4 ... 5 ... 6	(39-
Information Booklets Should Be Provided To Help People Learn How To Reduce Their Auto Gasoline Consumption	1 ... 2 ... 3 ... 4 ... 5 ... 6	(40-
There Should Be A System Of Grants Or Tax Credits That Would Apply To The Purchase Or Installation Of Energy Conserving Products	1 ... 2 ... 3 ... 4 ... 5 ... 6	(41-
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All Dwellings Should Be Required To Undergo An "Energy Audit" To Determine How Much Energy Is Being Used Inefficiently	1 ... 2 ... 3 ... 4 ... 5 ... 6	(49-

SECTION 4

IMPORTANCE OF STEPS TO CONSERVE ENERGY

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Using Radial Tires On Your Car	1 ... 2 ... 3 ... 4 ... 5 ... 6	(53-
Installing Fluorescent Lights	1 ... 2 ... 3 ... 4 ... 5 ... 6	(54-
Installing A Heat Pump	1 ... 2 ... 3 ... 4 ... 5 ... 6	(55-
Insulation Of Basement Walls	1 ... 2 ... 3 ... 4 ... 5 ... 6	(56-
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Using Your Fireplace As Much As Possible	1 ... 2 ... 3 ... 4 ... 5 ... 6	(58-
Using Premium Leaded Fuel	1 ... 2 ... 3 ... 4 ... 5 ... 6	(59-
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Installing An Airtight Wood Stove	1 ... 2 ... 3 ... 4 ... 5 ... 6	(63-
Switching From Oil To Gas Heating	1 ... 2 ... 3 ... 4 ... 5 ... 6	(64-
Lowering Maximum Heating Temperature From 20oC To 18oC	1 ... 2 ... 3 ... 4 ... 5 ... 6	

65/80

THANK YOU VERY MUCH!

POOR

QUALITY

ORIGINAL

